Range Report

December 2019

Introduction

The intent of this this report is to inform the decision maker about the range resource within the Cold Elk Range Analysis (CERA) project area and to compare the alternatives ability to move to range resource from the current condition to the desired condition.

> The desired condition is satisfactory rangelands as described in the Forest Plan (1990 Wallowa Whitman Land and Resource Management Plan, 2003 Hells Canyon Management Plan, PacFish InFish, PIBO Amendments). Satisfactory rangeland as described in the Forest Plan is fair condition with a stable trend and stream temperatures that are not above state standards because of loss of vegetation, stream stability is at least 90% or streams do not have head cuts (Forest Plan Glossary Page 40 and 41). Satisfactory range land is also described in the CMP as range and riparian vegetation will be at least mid-seral with an upward trend, soil will be at minimum mid seral with an upward trend, riparian hardwood age class will be mid-seral with an upward trend or later, and riparian hardwood class distribution will be no more than 35 percent moderate long term browsing impact class (CMP Gra-S2).

Forest Plan

WALLOWA-WHITMAN NATIONAL FOREST PLAN: FOREST-WIDE STANDARDS & GUIDELINES (1990)

The following list of standards and guidelines are a subset of all applicable Land and Resource Management Plan (Forest Plan) direction and this project is being analyzed for consistency to all applicable Forest Plan standards and guidelines for Rangeland Resources

1. Forage production in excess to that needed for the health of the plant and soil resources will be made available for harvest by wildlife and domestic livestock within the forage and browse utilization standards and guidelines from the LRMP (1990), (pp 4-51 and 52).
2. Give management and enhancement of water quality, protection of watercourses and streamside management units, and fish habitat priority over uses described or implied in all other management standards or guidelines (p 4-22).
3. Manage riparian areas so as to avoid measurably increasing water temperatures on Class I streams. On Class II and III streams, management will limit temperature increases to the criteria in State standards (p 4-23).
4. Mitigate negative impacts causing reduction in water quality to return water quality to previous levels in as short a time as possible (pp 4-23).
5. Enhance streambank vegetation where it can be effective in improving channel stability or fish habitat (pp 4-23).

6. Give areas in which water quality or channel stability are being adversely impacted high priority for treatment to minimize the effects of the impact or to correct the impacting activity (pp 4-23).

7. Habitats will be protected and managed for the perpetuation and recovery of Proposed, Endangered, Threatened and Sensitive species (pp 4-30).

8. Management will strive for maintenance of native and desirable introduced or historical plant and animal species and will provide for all seral stages in abundance and distribution (pp 4-1).

9. Habitat will be provided for viable populations of existing native and desirable non-native vertebrate wildlife species (pp 4-2).

10. Consider the effects of all Forest Service undertakings on significant cultural resources and avoid or mitigate any adverse effects (pp 4-20).

11. All environmental analyses conducted through NEPA for ground-disturbing activities will consider noxious weed management.

12. All projects incorporate noxious weed prevention strategies.

13. GM-1 Modify grazing practices (e.g. accessibility of riparian areas to livestock, length of grazing season, stocking levels, timing of grazing, etc.) that retard or prevent attainment of Riparian Management Objectives (PacFish).

14. GM-3 Limit livestock trailing, bedding, watering, salting, loading, and other handling efforts to those areas and times that will not retard or prevent attainment of Riparian Management Objectives or adversely affect inland native fish (PacFish).

HELLS CANYON NATIONAL RECREATION AREA COMPREHENSIVE MANAGEMENT PLAN DEIS: HELLS CANYON NATIONAL RECREATION AREA-WIDE STANDARDS & GUIDELINES (2003)

The following list of objectives, standards and guidelines are a subset of all applicable Hells Canyon National Recreation Area Comprehensive Management Plan DEIS (CMP) direction and this project is being analyzed for consistency to all applicable CMP objectives, standards and guidelines for Rangeland Resources.

Gra-O1: Manage grassland vegetation to ensure continued ecological function and sustainability of native ecosystems. Maintain and/or restore the ecological status of grassland communities to their PNC, (potential natural community), recognizing their HRV (historical range of variability) (pp C-45).

Gra-S1: On lands determined to be unsuitable or not capable for grazing by domestic livestock or determined to be in an unsatisfactory condition, the rangeland vegetation production for these lands would not be allocated to the allotment's carrying capacity. Domestic

livestock may still be permitted. In some situations, incidental livestock use will be authorized on lands identified as unsuitable. In these situations, livestock will be removed before rangeland vegetation use exceeds 10% and soil disturbance exceeds 10% on lands determined to be unsuitable and authorizing incidental livestock use pp C-45).

Gra-S2: Satisfactory condition will be evaluated during the allotment management planning process. The minimum condition and trend standards must be met for rangelands to be considered as satisfactory.

1. Rangeland vegetation in both uplands and riparian habitats will be in mid seral ecological status with an upward trend or higher condition based on PNC.
2. Soils, this includes soil surface conditions and soil stability will be in a mid-seral ecological status with an upward trend or higher condition based on PNC.
3. Riparian hardwood age class will be in a mid-seral ecological status with an upward trend or higher condition based on PNC.
4. Riparian hardwoods from class distributions show no more than 35 percent in moderate long-term browsing impact class.

For those sites identified in unsatisfactory condition, management practices will be designed to improve ecological status to a satisfactory condition. For sites in a satisfactory condition, management practices will maintain or improve the ecological status.

Where rangeland resources are in an unsatisfactory condition, livestock grazing may continue if the rate of recovery is within 70 percent of the natural rate of recovery (pp C-46).

Gra-S5: Implement grazing management practices to minimize the potential for transport of invasive plant propagates or seeds, or creation of habitats suitable for establishment of invasive species (pp C-48).

Gra-S6: Implement Forest Plan utilization standards (pp 4-52 and 53 of the Forest Plan) (pp C-48).

Gra-S7: Range improvements would be designed and located to minimize their impact on wilderness, scenic, heritage, fish, wildlife, unique botanical, and other resources (pp C-51).

Gra-G1: Emphasize enhancement and/or restoration of potential native vegetation (pp C-47).

Gra-G2: Incorporate management considerations in (Johnson and Simon 1987), and (Crowe and Clausnitzer 1997), or other FS approved guides, score cards or keys (pp C-48).

Gra-G3: During the allotment planning process evaluate periodic rest and deferred rotation grazing systems (pp C-50).

Gra-G4: Where feasible and desirable, plan and implement restoration projects to improve the health and sustainability of HCNRA grasslands, where current ecological conditions are mid- or earlier-seral status (pp C-50).

Methodology

Analysis Indicators

The project area is made up of pastures within three allotments. The condition of the project area was assessed at the pasture level. Therefore, range condition was assessed at the pasture level. Pasture (rangeland) condition was derived using a combination of assessment techniques including Interpreting Indicators of Rangeland Health (IIRH) and Proper Functioning Condition, and quantitative monitoring including Parker Three-step Condition and Trend (C & T) plots, Line-point Intercept, stream and riparian health assessments and surveys (see Fisheries and Hydrology Resource Report) and aerial reconnaissance to answer the question of are rangelands satisfactory as described in the Forest Plan. In areas where long term trend monitoring was not available professional judgment (including review of available data, historic accounts, utilization records, and past grazing management) was utilized to assess range condition.

The CERA analysis takes into consideration the Forest Plan and CMP for management direction. The Forest Plan provides direction to identify the condition of rangelands but generally relies heavily on forage condition and not ecological status. The CMP requires that ecological status is considered when identifying the condition of rangelands. Seral stages are used to quantify or represent the current condition of a specific site. Satisfactory range conditions are those in at least fair condition with an upward trend or mid-seral with an upward trend, while unsatisfactory range conditions are those in fair or mid (while trending downward), early, or very early seral stages or poor and very poor condition. See Table 1.

Table 1. Comparison of range condition ratings between the Forest Plan and HCNRA FEIS

Range Condition Forest Plan (1990)	Range Forage Condition Ratings Forest Plan (1990)	Ecological Status Seral Stages CMP (2003)
Satisfactory	Excellent or good	PNC or late seral
	Fair	Mid seral
Unsatisfactory	Poor	Early seral

	Very poor	Very early seral

- The indicator is satisfactory range condition stated as excellent, good, fair or late seral, mid seral, early seral as stated in the Forest Plan (table 1). The indicator is derived from condition and trend monitoring and from multiple indicator monitoring. The condition is also informed by indicator of rangeland health and proper functioning condition. The desired condition is satisfactory with a stable (Forest Plan) or upward trend (CMP) as described in the appropriate Forest Plan for that area. Table 1 is a satisfactory range condition cross walk.
- The indicator is understandable because the condition is present or not present. A definition of satisfactory is provided by both Forest Plans applicable to this project. The data collected was reviewed against the definition of satisfactory to make the determination. Where data was not available professional opinion was used to make a satisfactory determination. Where range condition is unsatisfactory the reason for the condition is stated as a means of informing management and alternative selection with the purpose of moving toward the desired condition and satisfactory rangeland.
- Alternatives 1, 2 and 3 will all achieve satisfactory condition, but with different rates or within different time frames. The standards, maximum utilization and mitigation measures are the same for alternatives 2 and 3.
    - Alternative 1, fastest achievement time, no grazing is the least disturbance to rangeland, still have nature, wildlife, stochastic events, other Forest multiple uses influencing rate of change and condition.
    - Alternative 2 is the proposed action. Proposed with alternative 2 is periodic spring pasture nonuse and multiple year rest of functioning at risk creeks. Grazing intensity is increased by 20% due to a change from a 6-month season of use to a 5-month season (decrease of season by 20%) of use on the Cold Spring Allotment from the current condition.
    - Alternative 3 has the same mitigations as alternative 2. Alternative 3 has a 40 percent increase in cattle use (from the current condition) by increasing the number of available head months (Cold Spring Allotment) and is equal to the current condition in seasonal duration. Professional judgement would state that the increase in head months is significant to the extent that the rate of recovery would be less than that of alternative 2 because of increased cattle number and the impacts associated with more cattle to riparian habitat and the extent of grazing area required to feed 40% more cattle therefor having cattle in more places or for a longer use period in the same places (Cold Spring Allotment). Both of which increase the opportunity for exceeding utilization limits.

Data sources

Historical Records

- 2210 and 2230 Range Files for the Cold Spring, Teepee Elk and Lost Cow Allotments
- Range Improvement Inspections, Maps, Journals
- Plant Associations of the Wallowa-Snake Province compiled by former Forest Ecologist Charles Johnson, and Steve Simon. There are several sites within the publication that are within the project area.

Ecological Site Descriptions

- Palouse and Nez Perce Prairies (009) MRLA and associated ESDs, see appendix E.
- Proper Functioning Condition of Stream Riparian Area Assessment
- Indicators of Rangeland Health Assessment

Past Monitoring Data

- C&T Files
- Ecology Program Forest-wide database for cover frequency and ecoplot data
- 2230 Range Files for the Cold Spring, Teepee Elk and Lost Cow Allotments

Current Monitoring Data

- C&T Files
- Multiple Indicator Monitoring Files
- Ecology Program Forest-wide database for cover frequency and ecoplot data
- 2230 Range Files for the Cold Spring, Teepee Elk and Lost Cow Allotments

GIS

- Corporate data

Assumptions

The following assumptions were made while writing this report:

- When classifying pastures as satisfactory or unsatisfactory the C and T was given the most weight because the IIRH plots were chosen randomly to represent the lower Joseph Creek watershed as part that watershed assessment. If these plots were in a place that could be grazed by cattle they were taken into consideration when stating pasture condition. An example is that an IIRH plot on a 60% slope is less informative about grazing than an IIRH plot on a 5 to 40% slope.
- The pasture conditions described in this document are based on the most recent data collected. As new data is collected to inform pasture condition the state of that pasture (satisfactory or unsatisfactory) may change. The data will also inform management of that pasture to include, but not limited to: season of use and nonuse, number of cattle, increase or decrease forage to be eaten or disturbance caused by cattle.
- Pasture condition is not static.

- The Forest Service assumes the Permittee desires to graze the entirety of the grazing season from the on date to the off date.
- The Forest Service assumes that annual operating instructions are followed by the Permittee.
- Site specific management is stated as % utilization of uplands and riparian use limits based on satisfactory and unsatisfactory conditions and rotation of pastures grazed in June 1 out of 3 years.
- Head months for horse grazing are not included with the stated total allowable head months of cattle to graze the allotment.
- The intent of horse grazing is to facilitate allotment and cattle management and not for pasturing horses on the allotment.
- The Forest Service assumes that range infrastructure (fences, ponds, spring boxes and water troughs, corrals, cow camps) will be maintained and reconstructed. Salt and mineral will be provided for cattle on the rangeland. Cattle will be herded with horses and OHVs on and off roads in accordance with the district (Wallowa Valley or HCNRA) where the activity is occurring.
- Implementation of the chosen alternative will be at the start of the grazing season after the decision is signed.
- Our intent is to construct new range infrastructure within two field seasons of the decision being signed.

Spatial and Temporal Bounding of Analysis Area

Satisfactory condition determination is made at the pasture level. The project area boundary for the range resource is the Cold Spring, Teepee Elk and Lost Cow Allotments. Pastures are the smallest manageable areas within the project boundary. The project area is made up of three allotments. Those allotments are made up of pastures.

The Forest Plan states less than ten years is short term (glossary 42) and more than ten years is long term (glossary 25).

CURRENT CONDITION OF THE TEEPEE ELK, COLD SPRING AND LOST COW ALLOTMENTS

Teepee Elk Allotment

The Teepee Elk Allotment (7,600 acres) has five pastures grazed in a rotation from June 1 to October 31. Allotment use is season long, pasture use varies within that season. The longest season of use is planned at 60 days, the shortest at 30 days. Pasture use is not static. The use of each pasture is determined from historic use, monitoring and managing for the resources in that pasture and the other pastures of the allotment. The Elk pasture is currently limited to use after 1 July because of steelhead critical habitat, steelhead presence before July 1st and the terms and conditions of consultation for steel head with the NMFS. The horse and holding pastures do not contribute a significant amount of grazing to the allotments accumulated use. The Teepee Elk Allotment is within the Hells Canyon National Recreation Area with the exception of the Elk Pasture. The Elk Pasture is located within the Wallowa Valley Ranger District and is bordered by the Table Mountain and Cougar Allotment on the west side, Cold Spring and Doe Creek Allotments on the east and private land owned by the Nez Perce Tribe on the north side.

Cattle, cow calf pairs and bulls, are trailed to the allotment from priviate land north of the allotment each spring and to private land near enterprise each fall. The usual fall route is the 4670 road through Doe Creek and Vigne Allotments, but may change with change of Permittee or variation of ranch operation. Trailing on a NFS road to private land with no grazing or layovers on allotments other than the permitted allotment is a known expected future action that would occur in proximity to the allotment on and off dates, but may also occur any time between the on and off dates of the allotment.

The Rock Creek pasture was most recently grazed in June and July for about 30 days but has previously been grazed for up to 60 days in June and July and then about 10 days in October. This patern has occurred for 12 to 18 years. This pasture has one designated monitoring area (DMA) on Broady Creek. Broady Creek is critical habitat for steelhead within the Rock Creek pasture. Data was gathered using the multiple inidicator moitoring method (MIM) (BLM tech reference 1737-23) in 2010 and 2016. Broady Creek is not perennial at this DMA. Stream bank stability was rated at 100% stable in 2010 and at 91% stable in 2016. The standard is 90% stream bank stability. The greenline ecological status is late (up from mid in 2010), the site wetland rating is fair and the winward greenline stabillity rating is mid. The riparian condition of this pasture is discussed further in the Aquatics BE for this project. The Rock Creek pasture has two condition and trend monitoring places, one of which overlaps with an ecoplot. The site that overlaps with the ecoplot was read in 2010 and 2016. The other site was read in 2016. The most recent ecological condition for both sites is good (late seral) with the ecoplot site stable and the other in a upward trend. There is one indicator of rangeland health assessment site in this pasture. It is located on a 60% slope with a southwest aspect at about 3700 feet elevation. The Idaho fescue, bluebunch wheat grass community is considered late seral with stable soil and slight to moderate or slight departure for soil and site stability, hydrologic function, and biotic integrity as described when compared with the potential natural communty. Due to slope this site would not be grazed extensively by cattle. The upland utilization monitoring that occurred

in this pasture (appendix B) was 2 to 8 inches above the minimum stubble hieght of 4 inches. This pasture is rated as satisfactory using the definition of satisfactory as defined in the CMP (table 1 and Gra-S2). The Rock Creek pasture is within the Hells Canyon National Recreation Area (HCNRA).

The Long Ridge pasture has been grazed for about 50 days in August and September. This pattern has occurred for 12 to 18 years. This pasture has no DMAs, C &Ts, Ecoplots, IIRH sites or listed ESA species critical habitat. The upland utilization monitoring that occurred in this pasture (appendix B) was 2 to 8 inches above the minimum stubble hieght of 4 inches. This pasture is rated as satisfactory based on professional judgement using the definition of satisfactory as defined in the CMP (table 1 and Gra-S2). The Long Ridge pasture is within the Hells Canyon National Recreation Area (HCNRA).

The Elk pasture was most recently grazed about 40 days in September and October. This pattern has occurred for 12 to 18 years. Within the Elk pasture is Peavine Creek. Peavine Creek is critical habitat for ESA threatened steelhead. There is one DMA within the Elk pasture on Peavine Creek. Peavine Creek within the Elk pasture is not entirely perennial. At the DMA Peavine Creek is perenial. Data was collected at this site one time in 2016 using the MIM method. Stream bank stability was rated at 84% stable. The standard is 90 % stream bank stability. The greenline ecological status rating is late, the site wetland rating is good, and the winward stability greenline rating is mid. The riparian condition of this pasture is discussed further in the Aquatics BE for this project. The Elk pasture has one condition and trend monitoring site that overlaps with an ecoplot that was most recently read in 2016. The site is mounded scabland at about 4800 feet elevation and has been described as being in poor condition with a downward trend for sandberg bluegrass parsnip flower buckwheat mounded scabland. The reason for the poor condition is the lack of bunchgrasses on the mounds and the decline of Sandberg's bluegrass and mountian brome in the scabland. There is one IIRH assessment site within the Elk pasture. It is located in a bluebunch wheat grass Idaho fescue mound intermound plant community on a less than 5% slope with a west aspect at about 4900 feet. This site was determined as no departure to slight departure for soil and site stability, hydrologic function, and biotic integrity as described when compared with the potential natural communty. The upland and riparian utilization monitoring that occurred in this pasture (appendix B) was 0 to 12 inches above the minimum stubble hieght of 3 or 4 inches depending on species present at the monitoring site. This pasture is rated as unsatisfactory using the definition of satisfactory as defined in the Forest Plan (streambank stability, table 1-poor condition CandT). The Elk pasture is within the Wallowa Valley Ranger District (WVRD).

The Elk Pasture is about 2,400 acres, which is 32 percent of the Teepee Elk Allotment and 6 percent of the CERA project area.

The Cold Spring Allotment

The Cold Spring Allotment (30,300 acres) has 14 pastures grazed in a rotation from June 1 to late October or early November. Allotment use is season long, pasture use varies within that season. The longest season of use is planned at 100 days, the shortest at 20 days, with about 50 day averages. Pasture use is not static. The use of each pasture is determined from historic use,

monitoring and managing for the resources in that pasture and the other pastures of the allotment. The Upper Cottonwood, Lower Cottonwood and South Wildhorse pastures have critical habitat for ESA listed threatened steelhead. The Cold Spring Allotment is generally within the Hells Canyon National Recreation Area. There are some portions of pastures on the south boundary of the allotment in the Wallowa Valley Ranger District. The Cold Spring Allotment is bordered by the Teepee Elk Allotment on the west side, private land partly owned by the Nez Perce Tribe on the North side, the Doe Creek and Chesnimnus Allotment on the South side and by Hells Canyon National Recreation Area on the East side.

Cattle, cow calf pairs and bulls are trailed to the allotment from priviate land near Enterprise each spring and to private land near Enterprise each fall. Cattle have also been moved to the allotment through and from private land north of the allotment. The usual route is the 4670 road through Doe Creek and Vigne Allotments, but may change with change of Permittee or transition of ranch operation. Trailing on a NFS road to private land with no grazing or layovers on allotments other than the permitted allotment is a known expected future action that would occur in proximity to the allotment on and off dates, but may also occur any time between the on and off dates of the allotment.

The Horse Creek pasture was most recently grazed in June and July for 40 days. This pasture has a range of use from 20 to 40 days or has been rested. Horse Creek within this pasture is intermittent and has recently been surveyed for steelhead habitat. It was determened that there is not steelhead habitat within Horse Creek within the Horse Creek pasture. There is a DMA within the pasture on Horse Creek. Monitoring shows the creek has 91% bank stability and meets the standard of 90% bank stability. The greenline ecological status rating is mid, the site wetland rating is poor and the winward stability rating is mid. The natural capability of this site is lower than at a perennial site due to the lack of water during summer and early fall. The riparian condition of this pasture is discussed further in the Aquatics BE for this project. The Horse Creek pasture has one condition and trend site that was last read in 2016. The site condition rating is fair with a downward trend due to annual varition in basal cover and non-native intermiediate wheatgrass being the dominant plant community. The utilization monitoring that has occurred shows upland utilization is at or slightly above the minimum stubble height of 4 inches. This pasture is rated as unsatisfactory (CandT fair with downward trend) using the definition of satisfactory as defined in the CMP (table 1 and Gra-S2).

The Horse Creek pasture is about 635 acres, which is less than 2 percent of the CERA project area and about 2 percent of the Allotment.

The North Cold Spring pasture was most recently used for 50 days in June and July, but has been used for 30 to 60 days in June and July or rested. This pasture has a shared boundary on Horse Creek with the Horse Creek pasture. The DMA in North Cold Spring pasture is the same DMA as the Horse Creek pasture. The condition of Horse Creek here is as described for the Horse Creek pasture. Horse Creek within this pasture is intermittent and has recently been surveyed for steelhead habitat. It was determened that there is not steelhead habitat within Horse Creek within the Horse Creek or North Cold Spring pasture. Monitoring of the Horse Creek DMA shows the creek has 91% bank stability and meets the standard of 90% bank stability. The greenline ecological status rating is mid, the site wetland rating is poor and the winward stability

rating is mid. The North Cold spring pasture has 4 condition and trend plots. Three of which were read in 2016 and one in 2011. The condition of these sites are described as good-up; good-stable, good-slight down and one as fair to good-up. One IIRH assessment was completed in this pasture in a north facing slope of 0 to 5% at about 5000 feet elevation. The analysis indicated slight to moderate departures from expected conditions for soil and site stability and hydrologic function; and slight departure for biotic integrity. Soil stability was assessed at none to slight departure and indicated good soil stability. The North Cold Spring pasture has one incidence of not meeting the minimum utilization of 3 inches in 2010, however has since had years with 0 to 6 inches or greater stubble hieght above the minimum stubble height of 3 or 4 inches based on species at the monitoring site. This pasture is rated as satisfactory using the definition of satisfactory as defined in the CMP (table 1 and Gra-S2).

The lower Cottonwood pasture was most recently rested. This pasture has been grazed in June and September, October and November for 30 to 60 days. The Lower Cottonwood pasture is divided by Cottonwood Creek. Cottonwood Creek is critical habitat for ESA threatened steelhead. Within Lower Cottonwood Creek pasture there is one designated monitoring area on Cottonwood Creek. It was read in 2016. Additionally a proper functioning condition of stream assessment was completed in 2015 for this same location. Monitoring of the DMA indicated stream bank stability was rated at 99% stable stream banks to exceed the standard of 90% stream bank stability. The greenline ecological rating is late, the site wetland rating is good and the winward greenline stability rating is high. Woody species were described as 18% seedlings, 55% young and 27% mature. In 2017 Lower Cottonwood Creek washed out from spring rain, thawing snow runoff or a combination of these actions that redistributed large wood and eroded and deposited creek bed material. This event changed the condition of the stream to an early seral state. Opportunity for recovery is good because of the amount of large wood adjacent to the stream and the number of adult plants adjacent to the stream to provide seed for new plant growth. Within the Lower Cottonwood pasture Cottonwood Creek is rated Functioning at Risk because of its condition after the runoff even in the spring of 2017. The riparian condition of this pasture is discussed further in the Aquatics BE (page 6) for this project. Cottonwood Creek on National Forest land is about 3 miles long and about 12 miles in total length . The runoff event affected about 50 percent of the National Forest area (about 1.5 miles) and an unknown extent of the private land portion. There is not a condition and trend monitoring site within the lower Cottonwood pasture. There is one IIRH assessment site within the pasture located in a mound intermound community on a 2 to 15% slope with a southwest aspect at about 5,000 feet elevation. The soil and site stability, hydrologic function, biotic integrity and soil stability are slightly departed from expected conditions. This pasture is rated as satisfactory using the definition of satisfactory as defined in the CMP (table 1 and Gra-S2). Cottonwood Creek within this pasture and its associated riparian area is in an early seral state and not satisfactory (CERA aquatics BE page 17, table 1)

The lower Bear pasture was most recently grazed about 30 days in June. This pasture has also been grazed in October or November for 15 to 20 days. There is an intermittent non critical habitat tributary of Cottonwood creek within this pasture. This pasture has no DMAs, C &Ts, Ecoplots, IIRH sites or listed ESA species critical habitat. This pasture is assessed as satisfactory based on professional opinion using the definition of satisfactory as defined in the

Forest Plan.

The lower Basin pasture was most recently rested. This pasture has been grazed for 30 days in June and 30 days in October, November. Basin Creek within the pasture is intermittent and is not critical habitat. This pasture has no DMAs, C &Ts, Ecoplots, IIRH sites or listed ESA species critical habitat. This pasture is assessed as satisfactory based on professional opinion using the definition of satisfactory as defined in the Forest Plan.

The north wildhose pasture is an upland pasture located on Wildhorse Ridge. This pasture has been grazed for about 30 days in June and July or July and August. Within the North Wildhorse pasture there is one condition and trend monitoring site and one indicator of rangeland health site. Data was collected at the condition and trend site most recently in 2016. The site was described as an Idaho fescue and prairie junegrass upland that is described as good and stable. The indicator of rangeland health site is in the upper Cottonwwod Creek subwatershed on top of Wildhorse Ridge at about 5000 feet elevation at a 10 to 15 percent slope in a mound inter mound community of Idaho fescue, priarie junegrass, and bluebunch wheat grass. The soil and site stability, hydrologic function and biotic integrity are described as moderately departed and soil stability is described as slight to moderate departure from expected conditions. The upland utilization monitoring within the north wildhorse pasture was 1 to 7 inches above the the minimum stubble height of 3 or 4 inches based on plant species present at the monitoring site. This pasture is rated as satisfactory using the definition of satisfactory as defined in the CMP (table 1 and Gra-S2).

The south Wildhorse pasture is an upland pasture located on Wildhorse Ridge. This pasture was most recently grazed for about 100 days in July, August, September and October. Within the South Wildhorse pasture there are three condition and trend monitoring sites. Data was collected at the condition and trend sites most recently in 2016. The sites are described as Idaho fescue/bluebunch wheatgrass biscuit scabland, Douglas fir/ pinegrass, and rigid sagebrush/sandberg bluegrass. The sites are at about 5,300 feet elevation and are described as poor stable, good up, and fair up. The upland utilization monitoring within the south wildhorse pasture was 1 to 7 inches above the the minimum stubble height of 3 or 4 inches based on plant species present at the monitoring site. This pasture is rated as satisfactory using the definition of satisfactory as defined in the CMP (table 1 and Gra-S2).

The upper Cottonwood pasture was most recently grazed in September and October for about 50 days. This pasture has also been grazed for about 50 days within August to November. Within the Upper Cottonwood pasture is Cottonwood Creek and East Fork Cottonwood Creek. Cottonwood Creek is critical habitat for ESA threatened steelhead. There is one designated monitoring area on Cottonwood Creek in the Upper Cottonwood creek pasture. It was read in 2016. Stream bank stability was rated at 99% stable stream banks to exceed the standard of 90% stream bank stability. The greenline ecological rating is late, the site wetland rating is good and the winward greenline stability rating is mid. Woody species were described as 21% seedlings, 21% young and 59% mature. The PFC assessment of Upper Cottonwood Creek in the Upper Cottonwood pasture is Properly Functioning Condition. The riparian condition of this pasture is discussed further in the Aquatics BE for this project. The utilization monitoring within the upper Cottonwood pasture pasture was 12inches above the the minimum stubble height of 4 inches

based on plant species present at the monitoring sites. This pasture is rated as satisfactory using the definition of satisfactory as defined in the CMP (table 1 and Gra-S2).

The South Cold Spring pasture is an upland pasture located on Cold Spring Ridge. This pasture was most recently grazed for 50 days in July, August and September. This season of use has also included October. In the South Cold Spring pasture there are two condition and trend monitoring sites and one indicator of rangeland health site. The condition and trend sites were looked at most recently in 2016 and 2010. Both sites are described as mountain big sage brush/mountain snowberry and California brome mound intermound communities at about 4000 feet elevation. Both sites are described as fair and stable. These sites are described as fair and stable because of a decline in shrub and bunchgrass cover and an increase in non-native wheat grasses. The indicator of rangeland health site was on a 60 to 70 percent slope that would not be extensively grazed because of the steepness of the site. The site is within a blue bunch wheat grass sandberg bluegrass community that is described as late seral. The site is described as slight to moderate departure for soil and site stability, hydrologic function, biotic integrity, and soil stability. The utilization monitoring within the south coldspring pasture pasture was 1 to 12 inches above the the minimum stubble height of 3 or 4 inches based on plant species present at the monitoring sites. This pasture is rated as unsatisfactory (CandT fair with stable trend) using the definition of satisfactory as defined in the CMP (table 1 and Gra-S2).

The South Cold Spring pasture is 3,200 acres, which is 8 percent of the CERA project area and about 11 percent of the Allotment.

The Cook Creek pasture has most recently been rested and has been rested for various reasons for about 10 years. The Cook Creek pasture is a mid elevation cayon pasture with narrow ridges and steep hillsides located between Cold Spring Ridge and Cook Creek. Within the pasture are Cook Creek, Five Points Creek and Dry Creek. These creeks are not designated critical habitat. Within the pasture are two condition and trend monitoring sites that were most recently visited in 2016. The sites are described as Idaho fescue/ blue bunch wheatgrass at about 5000 feet elevation. The sites are described as good slight down and good up with the justification of a decrease in Idaho fescue and an increase in Idaho Fescue. This pasture is rated as satisfactory using the definition of satisfactory as defined in the CMP (table 1 and Gra-S2).

The beef pasture is grazed as a holding and gathering pasture and as part of the south Cold Spring pasture or Lower Cottonwood pasture or has been rested in the past. This pasture has no DMAs, C &Ts, Ecoplots, IIRH sites or listed ESA species critical habitat. This pasture is assessed as satisfactory by profesional opinion using the definition of satisfactory as defined in the CMP (table 1 and Gra-S2).

The horse pasture and cow camp pasture are grazed as holding or gathering pastures and are grazed incidentally with horses or have been rested in the past. These pastures have no DMAs, C &Ts, Ecoplots, IIRH sites or listed ESA species critical habitat. These pastures are assessed as satisfactory by profesional opinion using the definition of satisfactory as defined in the CMP (table 1 and Gra-S2).

The road holding pasture has been rested or grazed as part of the north cold spring pasture. This

pasture has no DMAs, C &Ts, Ecoplots, IIRH sites or listed ESA species critical habitat. This pasture is assessed as satisfactory by profesional opinion using the definition of satisfactory as defined in the CMP (table 1 and Gra-S2).

The Lost Cow Allotment

The Lost Cow Allotment (180 acres) is one pasture with a spring and fall grazing season. This allotment was most recently grazed in common with the adjacent private land. Allotment use was annual with cattle grazed between 16 December through 15 February and 16 April to 15 June. This pasture has no DMAs, C&Ts, Ecoplots, IIRH sites or listed ESA species critical habitat. This allotment is vacant and has been since the cancellation of the associated private land grazing permit in 2015. The Lost Cow Allotment is in satisfactory condition based on professional opinion using the definition of satisfactory as defined in the CMP (table 1 and Gra-S2).

ESTIMATED STOCKING NUMBER FOR THE COLD SPRING, LOST COW AND TEEPEE ELK ALLOTMENTS:

Forage, animal unit months (AUMs), head months (HMs), and number of cows for the 5 or 6 months season of grazing for the Cold Spring, Teepee Elk and Lost Cow Allotments are estimated in table 3 using the following assumptions:

Assumptions:

- Acres available for grazing was calculated from the Capable Suitable model of suitable acres made by GIS for the Forest Plan.
- The suitable acres of the Cold Spring Allotment unsatisfactory pastures were not included because of CMP Gra-S1 that states …On lands determined to be in an unsatisfactory condition, the rangeland vegetation production for these lands would not be allocated to the allotment's carrying capacity.
- Use of unsatisfactory pastures will be authorized at the unsatisfactory use rate of 35% for upland grasslands in unsatisfactory pastures furthers described in the Forest Plan at pp 4-52 and 53.
- Utilization was estimated at 50% (50% of the grass grown is available to be eaten by cows), the Forest Plan states 45% utilization for forested areas and 55% utilization for grassland.
- Cows eat 780lbs of forage a month for each 1000 lbs. of cow weight.
- The Forest Service uses 1.32 as the AUM to HM conversion factor because most cows weigh more than 1000 lbs. and calves eat something.
- A cow-calf pair qualifies as one animal in these calculations if the calf is 6 months of age or less when the pair begins grazing within an allotment.
- 1 animal unit month is equal to 1000 lbs of adult cow and 780 pounds of forage.
- 1 head month is 1 adult animal (cow or bull greater than 6 months old) for 1 month (30.416667 days).
- 850 lbs. per acre of forage production based on judgement of the grassland plant communities in the project area and estimated using mid seral production from multiple plant communities as described in Plant Associations of the Wallowa Snake Province by Johnson and Simon.
- All columns in table 2 have been rounded to nearest whole number for display purposes.

Table 2. Estimated stocking number of cattle for CERA Allotments

Allotment	Total capable/Suitable Acres from model	Lbs. of forage /acre available for grazing at 50% utilization	Animal Unit Months	Permitted Head Months	Estimated Number of cows for 6-month season of use	capable/Suitable Acres per Head Month
Cold Spring All pastures	9,144	3,886,407	4,982	3,774	629 547 W/out the Cook Creek Pasture	2.4
Cold Spring Satisfactory pastures	6,645	2,823,907	3,620	2,743	457 375 W/out the Cook Creek Pasture	2.4
Teepee Elk	2,130	905,512	1161	879	176	2.4
Lost Cow	46	19,573	25	16	3	2.9

Current management including stocking level, timing and intensity is derived from past success. The season of use is a product of experience of the earliest use date considering rangeland health, range readiness and what worked for the rancher. The off date is also experience of when that number of cattle is running out of grass to eat, it is possible to gather the cattle before the snow stays and there is a decline of animal health for various reasons. The number of cattle is based on grass to eat and water to drink for the number of cattle trying to be grazed on the allotment and their mixed distribution. Success and adequate stocking of the allotment is when the cattle enter on the on date, leave on or near the off date and most of the cattle proposed to graze that allotment have spent the season grazing without exceeding the measurable grazing limitations of percent of grass eaten, amount of grass height left or the amount of physical impacts to the

stream bank. The effects section of this report will speak to effects of the timing, intensity, and frequency of grazing rather than specific numbers.

Current management requires permittees to achieve proper livestock distribution through monitoring, herding, salt placement and maintenance of existing water developments and fences. Stocking of each allotment is described in terms of head-months (HM). A HM is a unit of measure that counts one adult animal for 30.41667 days. A cow-calf pair qualifies as one animal in these calculations if the calf is 6 months of age or less when the pair begins grazing within an allotment.

It is theorized that for thousands of years, the HCNRA grasslands have experienced animal impacts as fluctuating populations of elk, deer, and bighorn sheep have grazed the area, and cyclic populations of rodents and insects impacted the area (CMP 2003).

Prior to Euro-American settlement, natural fires and intentional fires from Native Americans were also common within the HCNRA grasslands. It is generally assumed that the overall result was a grassland landscape that was never in a completely late-seral ecological status. Depending upon the severity of fire, wildlife impacts, insects and disease, or impacts by American Indians' livestock, the HCNRA always contained a gradient of vegetation seral states (CMP 2003).

The Nez Perce tribe was the main tribe to historically live within the project area; it is unknown exactly how long they lived in the area prior to European settlement. Historic records describe the Nez Perce as the first to graze this area with their horses as early as a hundred years prior to Lewis and Clark's expedition of 1804 and 1805 (Tucker, 1981). The Nez Perce maintained large numbers of horses, as the horse played a significant role in their mobility and lifestyle. Horse numbers among the Nez Perce were as high as 17,000 head in 1880 (Williams and Melville, 2005). The Nez Perce obtained cattle sometime after 1840, maintaining a viable herd. Their cattle numbers were as low as 600 head in 1872 and as high as 7,000 head in 1890 (Williams and Melville, 2005).

Livestock Management, including the introduction of written plans evolved over the decades after 1950. Permittees and the Forest Service worked together using the best knowledge at the time to create livestock use plans to improve range conditions. The general pattern has been a reduction in livestock over time and an increase in allotment acres through the addition of pastures from adjacent allotments or the purchase of private land by the Forest Service. Additional changes include fencing of boundaries where topographical features do not provide a sufficient barrier to limit cattle movement to within pastures and allotments; enclosure fencing of limited riparian areas to distribute cattle away from riparian habitat, use standards for the amount of grass to be eaten or the amount of physical disturbance allowed by cattle to rangelands including upland and riparian habitat, grazing by pastures vs by allotments, and limiting use periods of pastures usually for the benefit of riparian habitat and management for fish.

Transitory Rangeland

Many areas within the allotments have experienced timber harvest. During harvest activity, new roads were constructed and have remained open, allowing livestock access to areas previously inaccessible due to dense vegetation. Harvesting also allowed for the development of transitory rangeland where forage grasses and shrubs became established in areas that had previously been under closed forest canopy. Transitory range is defined as "forested lands that are suitable for grazing for a limited time following a complete or partial forest removal" (Spreitzer 1985). The increased forage production made available because of past forest management that reduced overstory shading (Hedrick D.W. 1975) has allowed for distribution of livestock over a larger area within the allotment boundaries. The forage produced following development of transitory range is highly variable depending on site conditions. Transitory forest range is temporary and becomes less productive as the trees grow again. Forage production for livestock can be expected to peak from a few years to perhaps 20-30 years after logging. Grass and forb production peaks earlier than shrub production (Bedunah and Willard, 1987). Through tree regeneration, this condition has been gradually reverting to a closed canopy forest and would result in reduced forage production over these portions of the allotments. This has resulted in increased reliance by livestock on higher production riparian areas and open grasslands with up to 40% canopy closure.

ENVIRONMENTAL CONSEQUENCES

Alternative 1 description-no grazing alternative

Under alternative 1, livestock grazing would no longer be authorized within the CERA allotments. This would mean cancellation of the Cold Spring and Teepee Elk Allotment grazing permits. Lost Cow Allotment is vacant and does not have an associated private land Term Grazing Permit. Applications for the Term Grazing Permits would not be accepted nor issued. The current permit holders would be notified that their term grazing permits would be cancelled after two years, pursuant to Forest Service Handbook (FHS) 2209.13 part 16.24, and Code of Federal Regulations (CFR) 36 CFR 222.4(4)(1). The FSH and CFR regulations indicate that a two-year notification is required prior to cancelling a permit, except in emergency situations. Alternative 1 would close three allotments, eliminating livestock grazing from 38,800 acres of National Forest System lands. Permits would not be issued for any of the three affected allotments unless a subsequent NEPA analysis and decision to restock the allotments was made. Maintenance of range developments on the allotments would no longer be the responsibility of the permittees. Developments built to facilitate livestock management, including allotment and pasture fences, livestock exclosures, and stock water ponds and water troughs would be abandoned. Permittees who participated in the development of range improvements would be reimbursed for their amortized share, consistent with direction in FHS 2209.13, Chapter 70. Developments built to reduce wildlife effects to resources, such as water developments and big game exclosures, would remain in place and would continue to be maintained by the Forest Service. Maintenance of allotment boundary fences adjacent to active allotments would be assigned to the active allotment Permittee.

Direct Effects and Indirect Effects

Within each allotment, domestic livestock effects on areas of upland and riparian rangeland vegetation (through grazing and browsing on riparian shrubs, riparian, and upland vegetation, as well as physical impacts to soil and water) would no longer occur. Reproductive rate, plant vigor, and ground cover in some areas would be allowed to proceed at natural rates. This alternative would allow upland areas in mid to late seral stage plant communities to maintain their condition over time. Interspersed areas where a conversion from historic plant communities has resulted in the establishment of annual or non-native perennial grass species would most likely persist. These areas where a transition has occurred will often result in a new climax plant community and will generally not be able to return to the native pre-disturbance community without significant restoration. These areas provide early season green forage and are generally sought out by ungulates. It is possible that with the absence of livestock grazing in these areas, the increase in annual grasses would inhibit the rate of perennial grasses to re-occupy the sites. In areas where upland vegetation indicates a decline in vegetative condition, the absence of livestock could have the potential for improvement if site conditions are favorable. The potential for introduction and spread of invasive plant species by domestic livestock would be eliminated, however the potential for introduction and spread by recreational livestock and wildlife would continue. Areas of soil compaction caused by past logging activities would remain, although there may be a reduction in soil compaction caused by livestock around water areas and salting grounds. The riparian areas accessed by livestock would exhibit a faster rate of recovery. This would be evident by less hoof action along streams and overall reduced herbivory on shrubs and

riparian vegetation. Wildlife impacts to vegetation and streambanks would remain the same. Time frames for changes in range condition are influenced by climate, fire and vegetation management, and big game use.

Private land boundary fences or fences in common with Bureau of Land Management (BLM) lands would remain intact with ownership assumed to belong to the private landowner or BLM.

Term Private Land Grazing and Term ON/OFF permits would be cancelled. If private landowners wish to continue grazing the associated private lands, it would be necessary for them to fence the boundaries or to otherwise prohibit their livestock from trespassing on NFS lands.

Without continued disturbance from livestock grazing there would be less compaction, bare ground and disturbance of biotic crusts in areas where livestock concentrate such as low gradient sites, trails, water sources, and salting and loafing areas and on steep sites where trailing is prevalent. Soil conditions in these areas would likely improve over time through natural processes including freeze\thaw cycles, wet\dry cycles and vegetative growth (Daniel et al 2002, Allington and Valone 2011). Effective ground cover of pastures and allotments would most likely continue to improve. These factors would increase infiltration rates, improve soil stability and decrease any associated surface soil erosion. Natural potential vegetation may or may not improve with absence of livestock grazing (Loeser et al. 2007). The amount of natural recovery and the total amount of time for soil damage to recover to acceptable levels depends on the extent, depth and degree of existing soil damage, and extent and degree in changes to potential natural vegetation. Water development sites would be abandoned and hardware such as troughs, pipe and exclosure fencing would be left on the landscape if needed for wildlife, or until further NEPA decisions or adequate funding is provided to remove them. If water development sites were not dismantled or removed, trough drains could plug over time allowing water to pool around the trough or run downhill creating new wetland areas and perhaps new channels on the landscape. The degree that new channels would form would depend on the amount of water flow and how much soil erosion occurred before vegetative recovery. Grazing by wild ungulates would continue to occur in the CERA. Soil disturbance from grazing by wild ungulates would also continue. Removal of grazing from the project area is expected to result in a decrease in the percent of acres with detrimental soil conditions over time, and it is expected that the recovery rate would be faster than under the grazing alternatives. For the soil resource, the removal of cattle from the CERA would have the most beneficial effect on the project area, and on isolated areas (where salt is placed and near water developments) where soil damage is occurring. This is because livestock grazing is not completely controllable and even with careful management, physical damage, trampling, and herbivory do occur. With Alternative 1, biological soil conditions including soil crust recovery and expansion would occur at the highest rate. Erosion risk would be reduced due to increased groundcover and litter, and decreased soil compaction and displacement. Under Alternative 1, there would not be a continuation of resource condition monitoring.

In some areas plant reproductive rate, vigor and resulting ground cover would change towards the desired condition at natural rates. Upland areas identified in mid to late seral stage would likely continue to move towards a later seral stage and potentially towards the Potential Natural Community (PNC). However, areas that have departed the PNC because of historical uses,

resulting in annual or non-native species dominance, would persist. Departed communities that have crossed a threshold have a modified climax plant association even with the removal of domestic livestock use. Under this Alternative these departed (transitioned) areas would not likely return to a pre-disturbance community without significant and expensive restoration. Alternative 1 would reduce the risk of invasive plant introduction and spread because of domestic livestock grazing. The risk associated with large-scale wildfire, recreation, wildlife, and other activities would continue. Areas of soil compaction caused by past homesteading activities, cultivation, and grazing overuse would remain. There may be a long-term reduction in soil compaction caused by livestock on steep slopes, around water areas, and salting grounds. Wildlife impact to vegetation would remain the same and potentially increase. Impacts to biological crusts from livestock grazing would not occur. Interactions between livestock and recreational users would not occur. There would be no cumulative effects due to livestock grazing because there would be no livestock grazing.

Cumulative Effects, Alternative 1

There would be no cumulative effects due to livestock grazing because there would be no proposed grazing.

Suppression of naturally occurring wildfire, intensive and improperly managed livestock grazing practices, significant increases and fluctuations in certain wildlife species populations, and timber harvest and silvicultural activities (including associated road construction) over the past 50 to 100 years has changed the pattern of certain riparian and upland vegetation communities, and in some cases, has altered natural functions. Although many of these historic practices have improved over the past several decades, some effects of these practices are still evident today. Past actions that may contribute to cumulative effects in the Cold Elk Range analysis area include timber harvest, planned and unplanned fire, the spread of invasive species and treatment of noxious weeds, maintenance of roads, regulated hunting seasons, disbursed camping and associated recreation, and grazing on adjacent land.

Grazing on adjacent private land would likely continue. This may mean a marked increase in utilization and impacts from livestock on these private lands, as the areas may become more heavily stocked to compensate for the loss of federal grazing land. Any fences required for livestock control would be constructed on private lands and not require future NEPA decisions.

Removal of livestock grazing from the Cold Elk Range Analysis area is not expected to change much of the effects of past or future management practices and projects. However, the removal of livestock grazing may result in some changes, such as faster recovery rates to herbaceous plant communities in those areas currently grazed to a moderate or greater extent. For the most part, upland plant communities most likely to be affected are those on flat or gently sloped ground, relatively close to water, primary entry and exit gates, and those grazed early in the season when upland grasses are most palatable. Changes may occur in cover or composition for those species most preferred for grazing by livestock. Without livestock grazing there would be a potential for increased amounts of fine fuels in the form of grasses, forbs and accumulated litter. This could affect future fire activities in that it could contribute to the rate of spread and intensity of fire. Riparian habitat, including shrub recruitment and stream bank stability, would

recover at a faster rate, specifically in the streams where ungulate grazing has been attributed to poor shrub recruitment.

Upland areas identified in mid to late seral stage would likely continue to move towards a later seral stage and potentially towards the Potential Natural Community (PNC). However, areas that have departed the PNC because of historical uses, resulting in annual or non-native species dominance, would persist. Departed communities that have crossed a threshold have a modified climax plant association even with the removal of domestic livestock use. Under this Alternative these departed (transitioned) areas would not likely return to a pre-disturbance community without significant and expensive restoration.

Alternative 2 description-proposed action

Allotment	Acres (National Forest)	Grazing Permit Type	Number of Pastures	Permitted Head Months	Grazing Season	Estimated number of animals
Cold Spring	30,405	Term	14	2165 cattle 24 horse	1 June to 31 October	433 cow/calves 4 horses
Teepee Elk	7,600	Term	4	880 cattle 24 horse	1 June to 31 October	175 cow/calves 4 horse
Lost Cow	180	Term	1	0 cattle 0 horse		0 cows/calves 0 horses

Table 3. Alternative 2 head months and season of use by allotment

Alternative 2 in the Lost Cow Allotment

- Close the Lost Cow Allotment to grazing

Alternative 2 in the Cold Spring Allotment:

- Construct new fence at the perimeter of Dougherty campground
    - No grazing within campground
- Within in Cold Spring Allotment all pastures are available for grazing from 1 June to 31 October
    - Except the Upper and Lower Cottonwood Pastures are available for use from 1 July to 31 October
    - Rest upper cottonwood pasture of Cold Spring Allotment every other year
    - Rest the Lower Cottonwood pasture of Cold Spring Allotment for 5 years,
        - To allow for stream and riparian recovery from 2017 debris flow
        - Allow grazing when a satisfactory condition as described in the Forest Plan is achieved or after 5 years of rest.
- Alternate pastures grazed in June at least every 3rd year

Alternative 2 in the Teepee Elk Allotment:

- Exclude cattle from grazing Peavine Creek within Elk Pasture

        - Construct about 3 miles of fence
        - Enclose about 1.5 miles and estimated 60 acres of Peavine Creek
        - Water gaps about each ½ mile
        - Grazing not proposed within enclosure
    - All pastures within the Teepee Elk Allotment are available for use from 1 June to 31 October
        - Except the Elk Pasture is available for use from 1 July to 31 October.
        - After the Peavine Creek enclosure is constructed the pasture will be availabe for use from 1 June to 31 October
    - Alternate pastures grazed in June at least every 3rd year

Alternative 2 is authorizing livestock (cattle) and an incidental level of horse grazing within the CERA allotments (Table 3). The level of permitted use would be similar to past levels that have been authorized through term grazing permits (FSH 2230, 2231.11 and 2231.13), which are administered each year by annual instructions and authorized by the payment of grazing fees (FSH 2230 2231.41). A description of current management can be found in the current condition portion of this report.

This Alternative requires permittees to achieve proper livestock distribution through herding, salt placement within the pastures, monitoring and maintenance of existing water developments and fencing. Stocking of each allotment is described in terms of head-months (HM) to be used during a grazing season. A HM is a unit of measure that counts one adult animal for 30.41667 days (365 days divided by 12 months). A cow-calf pair, bull or horse greater than 6 months old when placed on the Forest represents one animal for the purpose of calculating head months. Permittees will be authorized to allow permitted livestock to enter the allotments on or after the scheduled-on date each season and once range readiness indicators have been met and will be required to have livestock removed by or on the off date.

Livestock grazing would be permitted under rotation systems that are designed to meet Forest Plan direction, specific resource objectives or mitigation measures, and any subsequent terms and conditions resulting from consultation with NOAA and USFWS. The permittees would be required to meet all terms and conditions identified in their Term Grazing permit.

Cold Spring Allotment

Alternative 2 would authorize up to 2165 cattle HMs and 24 horse HMs on the Cold Spring Allotment for a season of use between June 1 and October 31. Annual authorization of HMs would be determined following assessment of the previous season's monitoring of livestock management, implementation monitoring and effectiveness monitoring to determine movement towards or obtainment of the desired condition. Should available forage increase or decrease due to climate change or forest vegetation management actions, the HM authorization may be adjusted to allow utilization of the available forage while meeting the site-specific resource

management objectives as identified in the Forest Plan and CMP. A permanent increase in permitted numbers or HMs would require a supplemental NEPA document and decision and be based on monitoring of the long-term ability of the existing management to meet the standards and objectives identified in Forest Plan.

Proposed Allotment Management

Proposed livestock management on this allotment will utilize a deferred stocking strategy. Livestock would enter the allotment on or after the scheduled on-date and when the range readiness indicators have been met as defined in the Annual Grazing Instructions (appendix C). Livestock would be moved through the allotment and managed to allow use of the available forage in a manner that does not exceed the maximum utilization standards listed below and permits the maintenance of basic needs of the herbaceous forage and browse plants as well as soil resources. Active herding, monitoring, salting, upland water developments and pasture fences would be used to keep livestock distributed within pastures. Livestock would be removed from the allotment by the authorized off date, October 31st. The maximum amount of grass available to be eaten is 45 percent of that year's grass growth by the weight of the plant in moist meadows and riparian floodplains, 55 percent in open grasslands and dry meadows and 45 percent in forested stands. The maximum amount of shrub-based forage allowed to be eaten would be 40 percent of that year's growth in riparian floodplains and forested stands. The allotment would be grazed by pasture or multiple pastures as scheduled prior to grazing and informed by experience and monitoring. Pastures grazed before July 1st would be grazed in a rotation that allows for a 1 June start of grazing the allotment and schedules pasture use so that grazing does not occur at the same place at the same time year after year with pastures used before July 1st not grazed until after July 1st, 1 year out of three. Cattle, cow calf pairs and bulls are trailed to the allotment from private land near Enterprise each spring and to private land near Enterprise each fall. Cattle have also been moved to the allotment through and from private land north of the allotment. The usual route is the 4670 road through Doe Creek and Vigne Allotments but may change with change of Permittee or transition of ranch operation. Trailing on a NFS road to private land with no grazing or layovers on allotments other than the permitted allotment is a known expected future action that would occur in proximity to the allotment on and off dates but may also occur any time between the on and off dates of the allotment.

Specific Changes to Current Management

- The Allotment season of use will be changed to June 1st through October 31st (from June 1st to November 31st)
    - all pastures are available for use from 1 June to 31 October
    - except the Upper and Lower Cottonwood Pastures are available for use from 1 July to 31 October

- To allow for stream and riparian recovery from a debris flow on Cottonwood Creek in 2017 the Lower Cottonwood pasture will be available for grazing when a satisfactory condition as described in the Forest Plan is achieved or after 5 years of rest
- To allow for improvement of riparian condition and to reduce the overlap of steelhead spawning and cattle grazing the upper Cottonwood pasture will be rested every other year
- To allow for continued satisfactory condition and recovery of unsatisfactory range condition rotation of pastures grazed before 1 July each 3rd year will be implemented, also stated as no grazing of the same pasture 3 years in a row before 1 July. The start of grazing for the allotment is 1 June
- To distribute cattle out of Dougherty Campground a fence will be constructed at the camp ground boundary
- It is anticipated that available forage within the allotment would continue to decrease without additional recruitment of transitory range through timber and fuels management. Implementation monitoring of livestock utilization would be completed to determine compliance as well as monitoring of livestock use outside of the allotment boundary. If it is determined that excessive utilization of available forage has become chronic (three out of five running years) due to livestock searching for forage towards the end of the authorized use period, reductions in authorized numbers or season of use would be made. These reductions would be made incrementally until the appropriate stocking has been determined by meeting utilization standards and the ability to control livestock use within the allotment boundary

Teepee Elk Allotment:

Alternative 2 would authorize up to 880 cattle HMs and 24 horse HMs on National Forest system land from June 1 through October 31. Annual authorization of HMs would be determined following assessment of the previous monitoring to determine movement towards or obtainment of resource objectives. Should available forage increase or decrease due to climatic or forest vegetation management actions, the HM authorization may be adjusted to allow utilization of the available forage while meeting the site-specific resource management objectives. Any permanent increases in permitted numbers or HMs would require a supplemental NEPA document and decision and be based on monitoring of the long-term ability of the existing management to meet the standards and objectives.

Proposed Allotment Management

Proposed livestock management on this allotment will utilize a deferred stocking strategy. Livestock would enter the allotment on or after the scheduled on-date and when the range readiness indicators have been met as defined in the Annual Grazing Instructions (appendix C). Livestock would be moved through the allotment and managed to allow use of the available forage in a manner that does not exceed the maximum utilization standards and permits the maintenance of basic needs of the herbaceous forage and browse plants as well as soil resources. Active herding, monitoring, salting, upland water developments and pasture fences would be used to keep livestock distributed within pastures. Livestock would be removed from the allotment by the authorized off date, October 31st. The maximum amount of grass available to be eaten is 45 percent of that year's grass growth by the weight of the plant in moist meadows and riparian floodplains, 55 percent in open grasslands and dry meadows and 45 percent in forested stands. The maximum amount of shrub-based forage allowed to be eaten would be 40

percent of that year's growth in riparian floodplains and forested stands. The allotment would be grazed by pasture or multiple pastures as scheduled prior to grazing and informed by experience and monitoring. Pastures grazed before July 1st would be grazed in a rotation that allows for a 1 June start to graze the allotment and schedules pasture use so that grazing does not occur at the same place at the same time year after year with pastures used before July 1st not grazed until after July 1st 1 year out of three. Cattle, cow calf pairs and bulls, are trailed to the allotment from private land north of the allotment each spring and to private land near enterprise each fall. The usual route is the 4670 road through Doe Creek and Vigne Allotments but may change with change of Permittee or variation of ranch operation. Trailing on a NFS road to private land with no grazing or layovers on allotments other than the permitted allotment is a known expected future action that would occur in proximity to the allotment on and off dates but may also occur any time between the on and off dates of the allotment.

Specific Changes to Management

- All pastures within the Teepee Elk Allotment are available for use from 1 June to 31 October
    - Except the Elk Pasture is available for use from 1 July to 31 October
    - After the Peavine Creek enclosure is constructed the Elk pasture will be available for use from 1 June to 31 October
- Peavine Creek within the Elk pasture is critical habitat for SR steelhead. To allow grazing of the Elk pasture before July 1st, recovery of the riparian area and change distribution of cattle within the pasture about 1.5 miles of Peavine Creek will be riparian fenced with no proposed grazing inside of the enclosure and to have water gaps about each ½ mile. Approximately 3 miles of fence is needed to construct the enclosure.
- To allow for continued satisfactory condition and recovery of range condition rotation of pastures grazed before 1 July each 3rd year will be implemented, also stated as no grazing of the same pasture 3 years in a row before 1 July. The start of grazing for the allotment is 1 June.
- It is anticipated that available forage within the allotment would continue to decrease without additional recruitment of transitory range through timber harvest. Implementation monitoring of livestock utilization would be completed to determine compliance as well as monitoring of livestock use outside of the allotment boundary. If it is determined that excessive utilization of available forage or livestock use outside of the allotment boundary has become chronic (three out of five running years) due to livestock searching for forage towards the end of the authorized use period, reductions in authorized numbers or season of use would be made. These reductions would be made incrementally until the appropriate stocking has been determined by meeting utilization standards and the ability to control livestock use outside the allotment boundary.

Lost Cow Allotment:

In the Lost Cow Allotment, no grazing would be authorized, and the allotment would be closed. This action is the same as described in alternative 1, no grazing including the discussion for direct, indirect and cumulative effects. The Lost Cow allotment is not adjacent to an active grazing allotment. The closest active allotment is the Cold Spring Allotment with about 2 miles of separation between the two allotments. The Lost Cow allotment is bounded by private land

on the west, Bureau of Land Management land on the north and Forest Service land on the south and east. The private land was part of a term private land grazing permit with the Lost Cow Allotment. This permit was vacated and has not been applied for. The BLM land to the north is part of a grazing permit with surrounding private land. The Forest Service land east and south of the Lost Cow Allotment is within the HCNRA and not part of an active grazing allotment.

Direct and Indirect Effects-Alternative 2

Alternative 2 would continue grazing on 2 allotments and discontinue grazing on 1 allotment. This discussion will focus on the 2 grazed allotments. Grazing would continue on 38,600 acres of National Forest System lands and discontinue on about 200 acres. Developments built to facilitate livestock management, including allotment and pasture fences, livestock exclosures, and stock water ponds and water troughs would continue to be maintained and reconstructed by the Permittee.

Within each allotment, domestic livestock effects on areas of upland and riparian rangeland vegetation (through grazing and browsing on riparian shrubs, riparian, and upland vegetation, as well as physical impacts to soil and water) would occur within the limits defined in this analysis and by the Forest Plan. Reproductive rate, plant vigor, and ground cover would proceed at a rate less than that achieved by no grazing. This alternative would allow upland areas in mid to late seral stage plant communities to maintain their condition. Interspersed areas where annual or non-native perennial grass species are present would most likely persist. Those areas where a transition has occurred will often result in a new climax plant community and will generally not be able to return to the native pre-disturbance community without significant restoration. In areas where upland vegetation indicates a decline in vegetative condition, postponement of grazing until after the spring growing season offers good potential for improvement if site conditions are favorable (Burkhardt and Sanders. 2012). The potential for introduction and spread of invasive plant species by domestic livestock would continue as would the potential for introduction and spread by recreational livestock and wildlife. Areas of soil compaction caused by past logging activities would remain, as would the compaction caused by livestock around water areas and salting grounds. The riparian areas accessed by livestock would recover at a rate less than if no livestock were grazed. Monitoring of each year's livestock grazing combined with monitoring of factors that are used to describe the current condition vs the desired condition will inform management choices that allow achievement of the desired condition. The amount of stream bank alteration is more than would occur without cattle grazing as would be the case with herbivory of shrubs and grasses. Wildlife impacts to vegetation and streambanks would occur and would be included with the amount of impacts caused by permitted grazing to vegetation and stream banks. Time frames for changes in range condition are influenced by climate, fire, vegetation management, and domestic livestock and wildlife use. The recovery time frame would be the most optimal without cattle grazing but at a measured and managed level with cattle grazing because of use limitations, monitoring and using monitoring to inform grazing management. The use limitations are total number of head months, season of use, minimum forage retained, or maximum forage grazed, and stream bank disturbance limits.

Livestock grazing would contribute to soil compaction, bare ground and disturbance of biotic crust throughout the allotment but focused on areas where livestock concentrate such as low

gradient sites, livestock trails, water sources, and salting and loafing areas. This is because livestock grazing is not completely controllable and even with careful management, physical damage, trampling, and herbivory do occur. Soil conditions in these areas would likely improve over time through natural processes including freeze\thaw cycles, wet\dry cycles and vegetative growth (Daniel et al 2002, Allington and Valone 2011), but not as much as if no grazing were to occur and more than if more grazing were to occur. Effective ground cover of pastures and allotments would most likely continue to improve the same as previously described. These factors would increase infiltration rates, improve soil stability and decrease any associated surface soil erosion. Natural potential vegetation may or may not improve with absence of livestock grazing (Loeser et al. 2007). The amount of natural recovery and the total amount of time for soil damage to recover to acceptable levels depends on the extent, depth and degree of existing soil damage, and extent and degree in changes to potential natural vegetation. Water development sites would continue to be maintained and provide water for cattle, recreation and wildlife. Grazing by wildlife including deer, elk, squirrels, marmots, rabbits and other small animals would continue to occur in the CERA project area. Soil disturbance from grazing by wild ungulates would also continue. Removal of grazing from the project area is expected to result in a decrease in the percent of acres with detrimental soil conditions over time. It is expected that the recovery rate would be fastest under the no grazing alternative and slower with alternative 2, but not as slow as alternative 3. For the soil resource, the removal of cattle from the CERA would have the most beneficial effect on the project area, and on isolated areas (where salt is placed and near water developments) of compaction (Forest Plan Glossary page 40, 41, and 43). The Forest Plan allows a soil condition rating on 25 percent of key areas to have a rating of poor or very poor and further describes soil damage as ash soils with a 20 percent increase in soil density and other soils with a 15 percent increase in soil density. Within most pastures

Upland areas identified in mid to late seral stage would likely continue to move towards a later seral stage. However, areas that have non-native species dominance, would persist. Departed communities that have crossed a threshold have a modified climax plant association even with the removal of domestic livestock use. Under Alternative 1, 2 and 3 these departed (transitioned) areas would not likely return to a pre-disturbance community without significant and expensive restoration. Alternative 2 does not reduce the risk of invasive plant introduction and spread because of domestic livestock grazing as much as alternative 1 but more so than alternative 3. The risk of spread due to large-scale wildfire, recreation, wildlife, and other activities is unaffected by the alternatives. Areas of soil compaction caused by past homesteading activities, cultivation, and grazing overuse would remain. Wildlife impact to vegetation would remain the same and potentially increase. Impacts to biological crusts from livestock grazing would occur. Interactions between livestock and recreational users would occur. When considering the factors of invasive species spread, impact to biological soil crust, and recreation alternative 1 would have the least affect because there is no grazing, therefore no intensity and no duration. Alternative 2 would have more affect than alternative 1 and less than alternative 3. The difference in affect would be from the change in grazing intensity and duration. Alternative 2 has more cattle grazing for a longer season than alternative 1 but has less cattle grazing for a shorter season that alternative 3. The change in intensity from alternative 2 to alternative 3 is 40 percent and the increase in duration is 20 percent.

While most pastures will be used after forage plants have blossomed and started to mature, at least one pasture per year in each allotment will be grazed during the growing season because of the June 1st on date. Alternative 2 proposes grazing in 19 pastures with 2 to 4 of those pastures grazed each year before July 1st. The proposed postponement would affect 75 percent of pastures each year and 100 percent of pastures each 3 years. This means that the plants in 75 percent of the pastures would be able to blossom each year and that 100 percent of the plants would be able to blossom before grazing every 3 years. Grazing during the spring growth (April to early July) period before seed set may encourage vegetative reproduction through tillering and increased vigor for bunchgrasses and rhizomatous grasses (Briske and Richards, 1995; Valentine et al, 1990). Postponement of grazing allows bunchgrasses to set seed and store carbohydrates on the years when grazing is postponed (Holechek, 1983). Seed distribution is the primary means for new bluebunch wheat grasses to grow but can spread vegetatively in precipitation zones above 18 inches annual rainfall (Ogle, 2002). In this project area bunchgrasses blossom at mid-June in lower elevations with seed maturity in mid-July and at higher elevations blossom late June or early July and mature in early August thus the delay of grazing for 1 out of 3 years in pastures grazed in June.

Key areas and riparian designated monitoring areas are intended to show the current level of grazing use or disturbance attributable to livestock grazing and its management during each grazing season. Monitoring key areas and establishing standards by which to manage provides assurance of the intent to move toward satisfactory rangelands and the desired condition.

This system encourages responsible management as it allows for continuation of grazing where permittees are responsive and preemptive in management of the resources on the allotments as well as meeting the terms and conditions of their permits. In cases where permittees are not engaged and adequately managing their livestock, poor performance is resolved or penalized as appropriate through permit administration. Managing pastures effectively with regular livestock herding, monitoring, salt placement, construction of trails, and regular maintenance of fences and upland water developments would result in an even distribution of livestock and grazing use across a pasture (Skovlin 1965). Promoting more even use means that previously ungrazed plants would have a greater chance of being grazed, and that individually, frequently grazed plants would be grazed fewer times.

Alternatives 2 and 3, including the mitigation measures, address the areas on the allotments where the existing forage or riparian condition is not currently meeting Forest Plan standards. Livestock management (changing timing, frequency, duration or intensity of grazing) would be informed by monitoring and adjusted to meet the annual utilization standards and the long-term trend outlined in the Forest Plan. The direct effects of livestock grazing on forage, soils and riparian areas would be minimized through monitoring of forage utilization (either herbaceous or woody) or streambank alteration. In those areas where Forest Plan standards or desired conditions are currently not being met, the allowable use of forage or bank alteration would be reduced to enable attainment of the Forest Plan standards and objectives.

If it is found that the permittee is not able to adequately manage the authorized livestock to remain within the allotment boundary or meet the utilization standards identified to allow achievement of resource objectives, more aggressive management in the form of fencing or reductions in authorized use would occur. Therefore, Alternative 2 would limit grazing impacts to meet Forest Plan standards.

Areas where forest canopy closure naturally reaches 60 percent and available forage for livestock decreases would see less livestock use over time. Conversely, the areas where forested vegetation maintains less than 60 percent canopy closure would likely show an increase in livestock grazing. Increased dependence on vegetation in these areas could result in declines in the forage condition if livestock is not managed properly and at the appropriate stocking rate for the available forage.

The effectiveness of the allotment's management would be measured by meeting the conditions within the annual operating instructions, monitoring and meeting standards for utilization and disturbance, and monitoring of long-term indicators including permanent vegetative monitoring plots to show status and trend. These plots established baseline vegetative condition and are used to determine trend on representative locations.

Under alternative 2, the permittee and range manager can adapt livestock management to meet the seasonal climatic variations and future forest vegetation changes resulting from fuels reduction thinning or burning, timber harvest, and wildfire expected over the lifetime of these AMPs. Alternative 2 is most likely to be successful because it most closely resembles the current grazing strategy. The amount of head months proposed in alternative 2 is the same as is currently being grazed and the current management has been successful at meeting utilization limits. Alternative 2 and the proposed mitigation measures increase management complexity to the benefit of the range resource through purposeful rotation of pastures on a 1 in 3-year basis for pastures grazed in the spring. In addition to pasture rotation utilization levels are being changed to allow pastures and riparian areas not in satisfactory condition to return to satisfactory condition. These proposals are more likely to be successful at the current stocking rate vs at an increased stocking rate. Under alternative 2 and 3 the stocking rate is the same on the Teepee Elk Allotment. Under alternative 2 on the Cold Spring Allotment the average number of cows for the 5-month season is 433. 433 cows would eat about 36 acres of grass per day or about 5,500 acres of grass per 5-month season. Compared with alternative 3 where the average number of cows for the 6-month season is 500. 500 cows would eat about 41 acres of grass per day or about 7,500 acres of grass per 6-month season. The change between the two alternatives is about 15 percent per day and about 35 percent per season. The total acres for both alternatives are within the estimated acres of available grass to eat on the Teepee Elk and Cold Spring Allotment. The management intensity required to be successful under alternative 3 is greater than alternative 2 because of the greater area required to feed the additional cows for the additional time. More cows for more time also means more use and longer use of pastures, water developments and salting sites. Grazing permits are issued, and the season planned based on occupancy (number of cows for an amount of time) and use limits (grass stubble height and stream bank alteration). It is more likely that cattle would graze the entirety of the season under alternative 2 than under alternative 3 because of the additional number of cows and time or graze fewer cows to be within the use limits

Cumulative Effects, Alternative 2

Under this Alternative, livestock would be authorized to graze the Cold Spring and Teepee Elk allotments in the CERA area. The allotment boundaries serve as the spatial boundary for this cumulative effect analysis. The CERA area is bounded by NFS land and private land. The

timeframe for these cumulative effects analysis is for the next 20 years; beyond that timeframe it would be speculative.

The potential for improper or unregulated grazing management and timber harvest practices on adjacent private lands, together with effects of grazing on public lands, could increase sediment delivery to streams caused by hoof action or riparian herbivory. It is unknown how many acres of private lands adjacent to the CERA allotments is currently grazed by livestock and what the current condition of these lands is in compared to the public lands. Observation and local knowledge of the area supports the assumption that most of the private lands adjacent to the CERA allotments are grazed by livestock. Appropriate management of the NFS lands should allow for retention of soil in the upper watersheds and reduce the potential for movement of sediment above what would be expected in near natural systems.

Suppression of naturally occurring wildfire, intensive and improperly managed livestock grazing practices, significant increases and fluctuations in certain wildlife species populations, and timber harvest and silvicultural activities (including associated road construction) over the past 50 to 100 years has changed the pattern of certain riparian and upland vegetation communities, and in some cases, has altered natural functions. Although many of these historic practices have improved over the past several decades, some effects of these practices are still evident today. Past actions that may contribute to cumulative effects in the Cold Elk Range analysis area include timber harvest, planned and unplanned fire, noxious weed introduction and treatments, construction and maintenance of roads, regulated hunting seasons, disbursed camping and associated recreation, and grazing within the project area and on adjacent land.

The Lower Joseph Watershed Restoration Project overlaps with the majority of the CERA area and has foreseeable actions that would overlap in time and space with alternatives 2 and 3. The activities associated with Lower Joseph Restoration project are vegetation management related (thinning, harvest, prescribed burning, road maintenance). The overall stable trend within the CERA area would continue when considering the overlapping effects of permitted grazing, vegetation management, potential noxious weed treatments, and recreational use.

Noxious weed treatments within the CERA area may require a review process where treated areas are assessed by the noxious weed program manager and range management specialist to determine if the area may need a season's rest from grazing. This could be accomplished by temporary fencing, resting the pasture, or herding livestock.

Recreational use would continue at current levels. Grazing and recreation may overlap in time in space. The effects from each activity is likely to be immeasurably additive because livestock grazing in those and adjacent to those areas is very low.

Silvicultural treatments are part of the landscape. When activities from the last thirty years are mapped, it becomes apparent that the same areas have been treated repeatedly. Treatments create more open canopy and potentially more forage. Road grading, piling and landings associated with past and proposed future vegetation treatments could temporarily restrict the movement of livestock and access to forage. Timber harvest within the project area is not anticipated to impact ongoing grazing. Prescribed fire or other vegetation restoration activities may require resting portions of, or the entirety of the pasture treated based on size of the activity area compared with the pasture.

Prescribed fire can improve forage conditions if burning is conducted when native perennial grasses and forbs are dormant. Burning too hot, or when plants begin to grow, typically in the spring, can kill or retard native plants and promote weedy species. Prescribed fires must be planned to avoid damaging fences and water improvements. Resting portions of the treated pasture may be necessary as the size of the area treated approaches 50% or greater of the pasture size. If fences are damaged during burning operations, repairs should be made immediately to prevent livestock from entering areas outside of established allotments. The range manager will work with fire management to determine timing and location of prescribed fire. Burn blocks should be planned in a manner that does not interrupt planned livestock management on the allotments. All burns will be coordinated with the District Range Management Specialist to reduce negative effects associated with prescribed fire and grazing.

Wildfires can increase forage in locations where they were low to moderate intensity. In forested range, high intensity fire generally reduces understory vegetation for several years. Post-fire seeding that is not targeted to specific areas of concern, such as the aerial seeding of non-native forage species, may have had negative impacts on native grass species. Without any seeding, bluebunch wheatgrass generally regains pre-fire cover the year after it burns. Idaho fescue can take a few years to regain pre-fire cover, but other components of Idaho fescue communities recover in the first year after burning (Johnson and Swanson 2005).

Alternative 3-Alternative description

Alternative 3 would continue grazing on the Cold Spring, Lost Cow and Teepee Elk allotments that are made up of 38,800 acres of National Forest System lands. Developments built to facilitate livestock management, including allotment and pasture fences, livestock exclosures, and stock water ponds and water troughs would continue to be maintained and reconstructed by the Permittee. The grant process (R6/PNW SUPPLEMENT FSH-2209. 13-2005-1 2209.13,10 EFFECTIVE DATE: December 15, 2005 Page 13 of 56. 13.21b Grant Priority) would be used issue a grazing permit on the currently vacant Lost Cow Allotment and for the increased number of cattle on the Cold Spring Allotment in alternative 3.

Cold Spring Allotment

Alternative 3 would authorize up to 3000 cattle HMs and 24 horse HMs on the Cold Spring Allotment for a season of use between June 1 and November 30. Annual authorization of HMs would be determined following assessment of the previous season's monitoring of livestock management, implementation monitoring and effectiveness monitoring to determine movement towards or obtainment of the desired condition. Should available forage increase or decrease due to climate change or forest vegetation management actions, the HM authorization may be adjusted to allow utilization of the available forage while meeting the site-specific resource management objectives as identified in the Forest Plan and CMP. A permanent increase in permitted numbers or HMs would require a supplemental NEPA document and decision and be based on monitoring of the long-term ability of the existing management to meet the standards and objectives identified in Forest Plan.

Proposed Allotment Management

Proposed livestock management on this allotment will utilize a deferred stocking strategy. Livestock would enter the allotment on or after the scheduled on-date and when the range readiness indicators have been met as defined in the Annual Grazing Instructions (appendix C). Livestock would be moved through the allotment and managed to allow use of the available forage in a manner that does not exceed the maximum utilization standards listed below and permits the maintenance of basic needs of the herbaceous forage and browse plants as well as soil resources. Active herding, monitoring, salting, upland water developments and pasture fences would be used to distribute livestock within pastures. Livestock would be removed from the allotment on or by the authorized off date, November 30th. The maximum amount of grass available to be eaten is 45 percent of that year's grass growth by the weight of the plant in moist meadows and riparian floodplains, 55 percent in open grasslands and dry meadows and 45 percent in forested stands. The maximum amount of shrub-based forage allowed to be eaten would be 40 percent of that year's growth in riparian floodplains and forested stands. The allotment would be grazed by pasture or multiple pastures as scheduled prior to grazing and informed by experience and monitoring. Pastures grazed before July 1st would be grazed in a rotation that allows for a 1 June start to graze the allotment and schedules pasture use so that grazing does not occur at the same place at the same time year after year with pastures used before July 1st not grazed until after July 1st 1 year out of three. Cattle, cow calf pairs and bulls are trailed to the allotment from private land near Enterprise each spring and to private land near Enterprise each fall. Cattle have also been moved to the allotment through and from private land north of the allotment. The usual route is the 4670 road through Doe Creek and Vigne Allotments but may change with change of Permittee or transition of ranch operation. Trailing on a NFS road to private land with no grazing or layovers on allotments other than the permitted allotment is a known expected future action that would occur in proximity to the allotment on and off dates but may also occur any time between the on and off dates of the allotment.

Specific Changes to Current Management

- The Allotment season of use will not be changed from the current condition of June 1st through November 30th.
    - all pastures are available for use from 1 June to 31 October
    - except the Upper and Lower Cottonwood Pastures are available for use from 1 July to 30 November
- To allow for stream and riparian recovery from a debris flow on Cottonwood Creek in 2017 the Lower Cottonwood pasture will be available for grazing when a satisfactory condition as described in the Forest Plan is achieved or after 5 years of rest
- To allow for improvement of riparian condition and to reduce the overlap of steelhead spawning and cattle grazing the upper Cottonwood pasture will be rested every other year
- When the condition is the same as 2016 MIM then grazing will be authorized in the Lower Cottonwood pasture
- To distribute cattle out of Dougherty Campground a fence will be constructed at the camp ground boundary
- To allow for continued satisfactory condition and recovery of unsatisfactory range condition rotation of pastures grazed before July 1st each 3rd year will be implemented,

also stated as no grazing of the same pasture 3 years in a row before July 1st. The start of grazing for the allotment is June 1st

- It is anticipated that available forage within the allotment would continue to decrease without additional recruitment of transitory range through timber and fuels management. Implementation monitoring of livestock utilization would be completed to determine compliance as well as monitoring of livestock use outside of the allotment boundary. If it is determined that excessive utilization of available forage has become chronic (three out of five running years) due to livestock searching for forage towards the end of the authorized use period, reductions in authorized numbers or season of use would be made. These reductions would be made incrementally until the appropriate stocking has been determined by meeting utilization standards and the ability to control livestock use within the allotment boundary.

Teepee Elk Allotment:

In the Teepee Elk Allotment Alternative 3 is the same as described in alternative 2, proposed action including the discussion for direct, indirect and cumulative effects.

Lost Cow Allotment:

Livestock Authorization

Alternative 3 would authorize up to 16 cattle HMs on NFS lands for a season of use between 1 November and 31 May. Annual authorization of HMs would be determined following assessment of the previous season's monitoring of livestock management, implementation monitoring and effectiveness monitoring to determine movement towards or obtainment of the desired condition. Should available forage increase or decrease due to climatic or forest vegetation management actions, the HM authorization may be adjusted to allow utilization of the available forage while meeting the site-specific resource management objectives as identified in the Forest Plan. Any increases in permitted numbers or HMs would require a supplemental NEPA document and decision and be based on monitoring of the long-term ability of the existing management to meet the standards and objectives identified in Forest Plan.

Proposed Allotment Management

Livestock would be managed to allow use of the available forage in a manner that does not exceed the maximum utilization standards listed below and permits the maintenance of basic needs of the herbaceous forage and browse plants as well as soil resources. Livestock would be removed from the allotment by the authorized off date or when utilization limits have been met. The maximum amount of grass available to be eaten is 45 percent of that year's grass growth by the weight of the plant in moist meadows and riparian floodplains, 55 percent in open grasslands and dry meadows and 45 percent in forested stands. The maximum amount of shrub-based forage allowed to be eaten would be 40 percent of that year's growth in riparian floodplains and forested stands. The allotment would be grazed as scheduled prior to grazing and informed by experience and monitoring.

Specific Changes to Current Management

• The season of use is from November 1to May 31 for up to 16 HMs.

• Implementation monitoring of livestock utilization would be completed to determine compliance as well as monitoring of livestock use outside of the allotment boundary. If it is determined that excessive utilization of available forage has become chronic (three out of five running years) due to livestock searching for forage towards the end of the authorized use period, or cattle are found on Forest Service land outside of the allotment boundaries reductions in authorized numbers or season of use would be made. These reductions would be made incrementally until the appropriate stocking has been determined by meeting utilization standards and the ability to control livestock use outside the allotment boundary.

Direct and Indirect Effects – Alternative 3

Alternative 3 proposes to increase the average number of cattle grazing the Cold Spring Allotment from 360 cows to 500 cows for a 6-month season of use (1 June to 30 November). The difference is a 40 % increase in cattle number. The monitoring data for the Cold Spring Allotment is sporadic. In 2010 there were instances of stubble heights not meeting utilization standards, however when monitoring has occurred since then the sites have been within the acceptable use limits. The long-term data shows the pastures of the Cold Spring Allotment are satisfactory (mid seral) with an upward trend except for the Horse Creek and the South Cold Spring pasture which are rated as unsatisfactory. The Forest Plan objective is to be satisfactory (mid seral) (Forest Plan Glossary, page 42-describes mid seral with a stable trend) (CMP Gra-S2 number 1 describes mid seral with an upward trend). Being that the trend is stable vs upward or in some cases unsatisfactory does not support an increase in cattle number. The range infrastructure of the Cold Spring Allotment is not well maintained. Increasing the number of cattle will rely more on fences and upland water developments to keep cattle in the scheduled pastures, to support clean pasture moves and to distribute cattle. With the current number of cattle there are additional fences proposed at allotment and pasture boundaries to support clean pasture moves and distribute cattle within the allotment and pastures. Range infrastructure that would support an increase in cattle numbers would be well maintained and functional. The water developments are not evenly distributed within the allotment. The upland water is clumped on the ridges. The streams supply additional water. The upland water focuses use to within about ½ mile of the water source as does the stream water. Water placement leaves portions of the allotment vulnerable to overuse and to underuse in the areas distant from water. Cottonwood Creek is a water source for cattle and adjacent to long grassy slopes for grazing. It is also critical habitat for steelhead. The creek condition is functioning at risk in the lower reach, there is not a fence or geographical barrier between the creek and the accessible grazing area. Increasing the number of cattle increases opportunity to degrade the stream condition and to not allow for the proposed rest to allow the creek to return to a functioning condition.

Within each allotment, domestic livestock effects on areas of upland and riparian rangeland vegetation (through grazing and browsing on riparian shrubs, riparian, and upland vegetation, as well as physical impacts to soil and water) would occur within the limits defined in this analysis

and by the Forest Plan. Reproductive rate, plant vigor, and ground cover would proceed at a rate less than that achieved by no grazing. This alternative would allow upland areas in mid to late seral stage plant communities to maintain their condition. Interspersed areas where annual or non-native perennial grass species are present would most likely persist. Those areas where a transition has occurred will often result in a new climax plant community and will generally not be able to return to the native pre-disturbance community without significant restoration. In areas where upland vegetation indicates a decline in vegetative condition, postponement of grazing until after the spring growing season offers good potential for improvement if site conditions are favorable. The potential for introduction and spread of invasive plant species by domestic livestock would continue as would the potential for introduction and spread by recreational livestock and wildlife. Areas of soil compaction caused by past logging activities would remain, as would the compaction caused by livestock around water areas and salting grounds. The riparian areas accessed by livestock would recover at a rate less than if no livestock were grazed. Monitoring of each year's livestock grazing combined with monitoring of factors that are used to describe the current condition vs the desired condition will inform management choices that allow achievement of the desired condition. The amount of stream bank alteration is more than would occur without cattle grazing as would be the case with herbivory of shrubs and grasses. Wildlife impacts to vegetation and streambanks would occur and would be included with the amount of impacts caused by permitted grazing to vegetation and stream banks. Time frames for changes in range condition are influenced by climate, fire, vegetation management, and domestic livestock and wildlife use. The recovery time frame would be the most optimal without cattle grazing but at a measured and managed level with cattle grazing because of use limitations, monitoring and using monitoring to inform grazing management. The use limitations are total number of head months, season of use, minimum forage retained, or maximum forage grazed, and stream bank disturbance limits.

Livestock grazing would contribute to soil compaction, bare ground and disturbance of biotic crust throughout the allotment but focused on areas where livestock concentrate such as low gradient sites, livestock trails, water sources, and salting and loafing areas. This is because livestock grazing is not completely controllable and even with careful management, physical damage, trampling, and herbivory do occur. Soil conditions in these areas would likely improve over time through natural processes including freeze\thaw cycles, wet\dry cycles and vegetative growth (Daniel et al 2002, Allington and Valone 2011), but not as much as if no grazing were to occur and more than if more grazing were to occur. Effective ground cover of pastures and allotments would most likely continue to improve the same as previously described. These factors would increase infiltration rates, improve soil stability and decrease any associated surface soil erosion. Natural potential vegetation may or may not improve with absence of livestock grazing (Loeser et al. 2007). The amount of natural recovery and the total amount of time for soil damage to recover to acceptable levels depends on the extent, depth and degree of existing soil damage, and extent and degree in changes to potential natural vegetation. Water development sites would continue to be maintained and provide water for cattle, recreation and wildlife. Grazing by wildlife including deer, elk, squirrels, marmots, rabbits and other small animals would continue to occur in the CERA project area. Soil disturbance from grazing by wild ungulates would also continue. Removal of grazing from the project area is expected to result in a decrease in the percent of acres with detrimental soil conditions over time, and it is expected that the recovery rate would be fastest under the no grazing alternative and slower with

alternative 2, but not as slow as alternative 3. For the soil resource, the removal of cattle from the CERA would have the most beneficial effect on the project area, and on isolated areas (where salt is placed and near water developments) of compaction (Forest Plan Glossary page 40, 41, and 43). The Forest Plan allows a soil condition rating on 25 percent of key areas to have a rating of poor or very poor and further describes soil damage as ash soils with a 20 percent increase in soil density and other soils with a 15 percent increase in soil density. Within most pastures are condition and trend plots and indicator of rangeland health plots. Both methods asses vegetation and soil condition. These plots are used to classify pastures as satisfactory or unsatisfactory. Overall the project area has 3 unsatisfactory pastures because of vegetation condition and no unsatisfactory pastures because of soil condition. Unsatisfactory pastures are about 16 percent of the project area. As previously stated, the areas near livestock watering sites and where livestock are provided salt would also have poor soil conditions. Within the project area there are about 100 water developments and an additional 100 salt sites. If 1 acre associated with each water development and salt location has poor soil condition this is less than 1 percent of the project area which is within the 25 percent allowable unsatisfactory soil condition rating of poor or very poor. With Alternative 3, biological soil conditions including soil crust recovery and expansion would occur at a rate less than no grazing and alternative 2. Under Alternative 2 and 3, there would be a continuation of resource condition monitoring that includes short term monitoring of that years use and long-term monitoring of range resources.

In some areas plant reproductive rate, vigor and resulting ground cover would change towards the desired condition at natural rates. Upland areas identified in mid to late seral stage would likely continue to move towards a later seral stage and potentially towards the Potential Natural Community (PNC). However, areas that have departed the PNC because of historical uses, resulting in annual or non-native species dominance, would persist. Departed communities that have crossed a threshold have a modified climax plant association even with the removal of domestic livestock use. Under Alternative 1, 2 and 3 these departed (transitioned) areas would not likely return to a pre-disturbance community without significant and expensive restoration. Alternative 3 has the greatest risk of invasive plant introduction and spread because of domestic livestock grazing when compared to alternative 1, no grazing and alternative 2. Areas of soil compaction caused by past homesteading activities, cultivation, and grazing overuse would remain. Wildlife impact to vegetation would remain the same. Impacts to biological crusts from livestock grazing would occur. Interactions between livestock and recreational users would occur. When considering the factors of invasive species spread, impact to biological soil crust, and recreation alternative 1 would have the least affect because there is no grazing, therefore no intensity and no duration. Alternative 3 would have more affect than alternatives 1 and 2. The difference in affect would be from the change in grazing intensity and duration. Alternative 3 has more cattle grazing for a longer season than alternative 1 and 2. The change from alternative 2 to alternative 3 is a 40 percent increase in intensity and a 20 percent increase in duration. Meaning there is 40 percent more head months available and the grazing season is 20 percent longer as proposed for alternative 3 when compared with alternative 2.

While most pastures will be used after forage plants have reached maturity, at least one pasture per year in each allotment will be grazed during the growing season because of the June 1st on date. Alternative 3 proposes grazing in 20 pastures with 3 to 5 of those pastures grazed each year before July 1st. The proposed rotation would affect 75 percent of pastures each year and

100 percent of pastures each 3 year. This means that the plants in 75 percent of the pastures would be able to grow to maturity before grazing each year and that 100 percent of the plants would be able to grow to maturity before grazing every 3 years. Grazing during the spring (April to early July) growth period before seed set may encourage vegetative reproduction through tillering and increase vigor for bunchgrasses and rhizomatous grasses (Briske and Richards, 1995; Valentine et al, 1990) however, postponement allows bunchgrasses to set seed and store carbohydrates on the years when grazing is postponed (Holechek, 1983). Seed distribution is the primary means for new bluebunch wheat grasses to grow but can spread vegetatively in precipitation zones above 18 inches annual rainfall (Ogle, 2002). In this project area bunchgrasses blossom at mid-June in lower elevations with seed maturity in mid-July and at higher elevations blossom late June or early July and mature in early August thus the nonuse period for 1 out of 3 years in pastures grazed in June.

Key areas and riparian designated monitoring areas are intended to be representative of grazing use within the pasture and have been chosen to show the current level of utilization or disturbance attributable to livestock grazing and its management during each grazing season. Monitoring key areas and establishing standards by which to manage provides assurance to all other areas of the pasture where monitoring may not occur and provides information to make grazing management decisions.

This system encourages responsible management as it allows for continuation of the existing levels of grazing where permittees are responsive and preemptive in management of the resources on the allotments as well as meeting the terms and conditions of their permits. In cases where permittees are not engaged and do not adequately managing their livestock, poor performance is resolved or penalized as appropriate. Managing pastures effectively with regular livestock herding, monitoring, salt placement, construction of trails, and regular maintenance of fences and upland water developments would result in an even distribution of livestock and grazing use across a pasture (Skovlin 1965). Promoting more even use means that previously ungrazed plants would have a greater chance of being grazed, and that individually, frequently grazed plants would be grazed fewer times.

Alternatives 2 and 3 including the mitigation measures address the areas on the allotments where the existing forage or riparian condition is not currently meeting Forest Plan standards. Livestock management (changing timing, frequency, duration or intensity of grazing) would be informed by monitoring and adjusted to meet the utilization standards identified in the proposed action. The direct effects of livestock grazing on forage, stocking s and riparian areas would be minimized through monitoring of forage utilization (either herbaceous or woody) or streambank alteration. In those areas where Forest Plan standards or desired conditions are currently not being met, the allowable use of forage or bank alteration would be reduced to enable attainment of the Forest Plan standards and objectives.

If it is found that the permittee is not able to adequately manage the authorized livestock to remain within the allotment boundary or meet the utilization standards identified to allow achievement of resource objectives, more aggressive management in the form of fencing or reductions in authorized use would occur. Therefore, Alternative 3 would limit grazing impacts to meet Forest Plan standards and site-specific resource objectives but may require more aggressive management than alternative 2 based on the increased intensity and duration of the alternative.

Areas where forest canopy closure naturally reaches 60 percent and available forage for livestock decreases would see less livestock use over time. Conversely, the areas where forested vegetation maintains less that 60 percent canopy closure would likely show an increase in livestock grazing. Increased dependence on vegetation in these areas could result in declines in the forage condition if livestock is not managed properly and at the appropriate stocking rate for the available forage.

The effectiveness of the allotment's management would be measured by meeting the conditions within the annual operating instructions, monitoring and meeting standards for utilization and disturbance, and monitoring of long-term indicators including permanent vegetative monitoring plots to show status and trend (appendix D, E). These plots established baseline vegetative condition and are compared with themselves through time to determine trend on representative locations.

Under alternative 3, the permittee and range manager can adapt livestock management to meet the seasonal climatic variations and future forest vegetation changes resulting from fuels reduction thinning or burning, timber harvest, and wildfire expected over the lifetime of these AMPs. Alternative 2 is most likely to be successful because it most closely resembles the current grazing strategy. Alternative 3 has an increase of intensity when compared with the current grazing strategy. The amount of use proposed in alternative 3 is greater than what is currently being grazed. Alternative 3 and the proposed mitigation measures increase management complexity to the benefit of the range resource through purposeful rotation of pastures on a 1 in 3-year basis for spring grazed pastures. In addition to pasture rotation utilization levels are being changed to allow pastures and riparian areas not in satisfactory condition to return to satisfactory condition. These proposals are more likely to be successful at the current stocking rate (alternative 2) vs at an increased stocking rate (alternative 3). Under alternative 2 and 3 the stocking rate is the same on the Teepee Elk Allotment. Under alternative 2 on the Cold Spring Allotment the average number of cows for the 5-month season is 433. 433 cows would eat about 36 acres of grass per day or about 5,500 acres of grass per 5-month season. Compared with alternative 3 where the average number of cows for the 6-month season is 500. 500 cows would eat about 41 acres of grass per day or about 7,500 acres of grass per 6-month season. The change between the two alternatives is about 15 percent per day and about 35 percent per season. The total acres for both alternatives are within the estimated acres of available grass to eat on the Teepee Elk and Cold Spring Allotment. The management intensity required to be successful under alternative 3 is greater than alternative 2 because of the greater area required to feed the additional cows for the additional time. More cows for more time also means more use and longer use of pastures, water developments and salting sites. Grazing permits are issued, and the season planned based on occupancy (number of cows for an amount of time) and use limits (grass stubble height and stream bank alteration) it is more likely that cattle would graze a shorter season under alternative 3 than under alternative 2 or have fewer cows to be within the use limits because of the additional number of cows and time.

Cumulative Effects, Alternative 3

Alternative 3 authorizes grazing on the Cold Spring, Teepee Elk and Lost Cow allotments in the CERA area. The project areas boundary serves as the spatial boundary for this cumulative effect analysis. The CERA area is bounded by NFS land and private land. The timeframe for this

cumulative effect analysis is for the next 20 years; beyond that timeframe it would be speculative.

The cumulative effects for alternative 3 are the same as discussed for alternative 2 with the understanding that the effects will extend to the Lost Cow Allotment and may have increased intensity on the Cold Spring Allotment because of the increase in head months and the longer grazing season when compared with alternative 2. The Lost Cow Allotment does not have a livestock water source and must be grazed in common with the adjacent private land.

The potential for improper or unregulated grazing management and timber harvest practices on adjacent private lands, together with effects of grazing on public lands, could increase sediment delivery to streams caused by hoof action or riparian herbivory. It is unknown how many acres of private lands adjacent to the CERA allotments are currently grazed by livestock and what the current condition of these lands is in compared to the public lands. Observation and local knowledge of the area supports the assumption that most of the private lands adjacent to the CERA allotments are grazed by livestock. Appropriate management of the NFS lands should allow for retention of soil in the upper watersheds and reduce the potential for movement of sediment above what would be expected in near natural systems.

Suppression of naturally occurring wildfire, intensive and improperly managed livestock grazing practices, significant increases and fluctuations in certain wildlife species populations, and timber harvest and silvicultural activities (including associated road construction) over the past 50 to 100 years has changed the pattern of certain riparian and upland vegetation communities, and in some cases, has altered natural functions. Although many of these historic practices have improved over the past several decades, some effects of these practices are still evident today. Past actions that may contribute to cumulative effects in the Cold Elk Range analysis area include timber harvest, planned and unplanned fire, noxious weed introduction and treatments, construction and maintenance of roads, regulated hunting seasons, disbursed camping and associated recreation, and grazing within the project area and on adjacent land.

The Lower Joseph Watershed Restoration Project overlaps with the majority of the CERA area and has foreseeable actions that would overlap in time and space with alternatives 2 and 3. The activities associated with Lower Joseph Restoration project are vegetation management related (thinning, harvest, prescribed burning, road maintenance). The overall upward trend within the CERA area would continue when considering the overlapping effects of permitted grazing, vegetation management, potential noxious weed treatments, and recreational use. The project activities of Lower Joseph Watershed Restoration Project have the potential to spread invasive species.

Noxious weed treatments within the CERA area may require a review process where treated areas are assessed by the noxious weed program manager and range management specialist to determine if the area may need a season's rest from grazing. This could be accomplished by temporary fencing, resting the pasture, or herding livestock.

Recreational use would continue at current levels. Cumulative effects to recreation are discussed in the Recreation Resources report. Grazing and recreation may overlap in time in space. The effects from each activity is likely to be immeasurably additive because livestock grazing in those and adjacent to those areas is very low.

Silvicultural treatments are part of the landscape. When activities from the last thirty years are mapped, it becomes apparent that the same areas have been treated repeatedly. Treatments create more open canopy and potentially more forage. Road grading, piling and landings associated with past and proposed future vegetation treatments could temporarily restrict the movement of livestock and access to forage. Timber harvest within the project area is not anticipated to impact ongoing grazing. Prescribed fire or other vegetation restoration activities may require resting portions of, or the entirety of the pasture treated based on size of the activity area compared with the pasture.

Prescribed fire can improve forage conditions if burning is conducted when native perennial grasses and forbs are dormant. Burning too hot, or when plants begin to grow, typically in the spring, can kill or retard native plants and promote weedy species. It is recommended that prescribed fire be planned to avoid damaging fences and water improvements. Resting portions of the treated pasture may be necessary as the size of the area burned approaches 50% or greater of the pasture size. If fences are damaged during burning operations, repairs must be made immediately to prevent livestock from entering areas outside of established allotments. The range manager will work with fire management to determine timing and location of prescribed fire. Burn blocks should be planned in a manner that does not interrupt planned livestock management on the allotments. All burns will be coordinated with the District Range Management Specialist to reduce negative effects associated with prescribed fire and grazing.

Wildfires can increase forage in locations where they were low to moderate intensity. In forested range, high intensity fire generally reduces understory vegetation for many years. Post-fire seeding that is not targeted to specific areas of concern, such as the aerial seeding of non-native forage species, may have had negative impacts on native grass species. Without any seeding, bluebunch wheatgrass generally regains pre-fire cover the year after it burns. Idaho fescue can take a few years to regain pre-fire cover, but other components of Idaho fescue communities recover in the first year after burning (Johnson and Swanson 2005).

Prescribed fire can improve forage conditions if burning is conducted when native perennial grasses and forbs are dormant. Burning too hot, or when plants begin to grow, typically in the spring, can kill or retard native plants and promote weedy species. Prescribed fires must be planned to avoid damaging fences and water improvements. Resting portions of the treated pasture may be necessary as the size of the area treated approaches 50% or greater of the pasture size. If fences are damaged during burning operations, repairs should be made immediately to prevent livestock from entering areas outside of established allotments. The range manager will work with fire management to determine timing and location of prescribed fire. Burn blocks should be planned in a manner that does not interrupt planned livestock management on the allotments. All burns will be coordinated with the District Range Management Specialist to reduce negative effects associated with prescribed fire and grazing.

Effects Common to Alternatives 2 and 3

Under the alternative 2 and 3 maintenance of rangeland improvements (fences and water developments) prior to turning cattle out in the allotments and while the allotments or adjacent allotments are in use, would continue, therefore limiting or reducing potential direct and indirect impacts to soils (BMP, 2013 Range Section – control of livestock distribution and maintenance of rangeland improvements).

Activity Common to Alternatives 2 and 3

The mitigation measures or actions common to grazing alternatives 2 and 3 are:

- Alternation of pastures grazed in June at least every 3rd. year
    - The earliest on date for the allotment would be 1 June. Alternation could occur through rotation of pastures or delaying the entry date of the allotment.
- Water development Changes
    - Cold Spring Allotment
        - Road Gulch T5N R47 section 6 center, North Cold Spring Pasture of Cold Spring Allotment
            - Construct New Enclosure Fence to include all of spring source
            - Install New Water trough
        - Old Barrel-Fence and Trough T5N R46 section 16 SW NE, Lower Basin Pasture of Cold Spring Allotment
            - Construct larger enclosure fence to include all of spring source
            - Install new water trough
        - Cold Spring 1 T5N R47 Section 29 NE SE, Cow Camp of Cold Spring Allotment
            - Construct larger enclosure fence to include all of spring source
            - Install new water trough
        - Cold Spring 2 T5N R47 Section 29 NE SE, Cow Camp of Cold Spring Allotment
            - Construct New Enclosure Fence to include all of spring source
            - Install New Water trough
        - Wild horse Spring T5N R46E section 23 SW SE, North Wild horse Pasture of Cold Spring Allotment
            - Construct larger enclosure fence to include all of spring source
            - Install new water trough

    - Teepee Elk Allotment
        - Long Ridge 2 T4N R46E section 3, Long Ridge Pasture of Teepee Elk Allotment
            - Construct larger enclosure fence to include all of spring source
            - Install new water trough

- Construct 4 drift fences on the Cold Spring Allotment
    - Dry Creek Trail in the Cook Creek Pasture
    - 5 Points Trail in the Cook Creek Pasture
    - Howard Crossing Trail on East Fork Cottonwood Creek in the Upper Cottonwood Pasture
    - Deadhorse Creek Trail on the boundary of the Beef Pasture and Lower Cottonwood Pasture

WWNF Range Monitoring Strategy

This monitoring strategy is based on those areas where known ESA listed fish spawning overlaps with livestock grazing. USFS District range and fisheries personnel will work together to determine when and where annual monitoring will occur, and include the following level of implementation monitoring:

1. USFS range managers will instruct (via annual meetings and AOIs) grazing permittees each year to notify permit administrators when they think use indicator triggers are nearing or have been reached (e.g. stubble height or streambank alteration) and they are going to move livestock to the next pasture or off the forest. It is acceptable for permittee monitoring to be a stubble height for all grass and grass-like species along the greenline, not specific to key hydric species. This will ensure that:

    a. In-season conditions are being looked at on the ground to reduce the potential for negative impacts;

    b. Information from these field observations can be incorporated into out-year grazing management (i.e. adaptive management); and

    c. Notice is provided for Forest Service personnel to complete timely mid-season pasture or end of season streambank alteration monitoring, if necessary or required.

2. For those pastures without ESA listed fish spawning, but have designated critical habitat, the FS will conduct at a minimum ocular monitoring mid-season once every 3-5 years on a rotating basis.
3. Trained personnel will complete end of season streambank alteration monitoring using MIM protocol within one week or as soon as possible of livestock being moved. Results will be summarized along with ocular/qualitative utilization observations shared by permittees into a year-end annual monitoring report to be shared with the Services.
   Lessons learned from the combined efforts of move triggers followed by permittees and end-point streambank alteration and residual stubble height monitoring will be the driver of adaptive management changes in grazing prescriptions.

Key areas are a monitoring point for grazing use. It is assumed that key areas, when properly selected, reflect the overall acceptability of current management over the range and serve as an indicative sample of range conditions, trend or degree of use.

A DMA is a permanently marked segment of a stream at least 110 m long that has been selected for monitoring and established by an interdisciplinary team of highly experienced personnel with knowledge of the management area.

Riparian Grazing Permit Management Strategy

The WWNF will use the following adaptive management steps to adjust grazing management for specific pastures, both over the long term (3–5 years) and annually, if needed to minimize the impact of livestock on streams. The annual adaptive management strategy describes how the WWNF will adjust grazing management annually, if needed, to ensure annual use indicators are met. The long-

term strategy describes how the WWNF will use effectiveness monitoring results to adjust grazing management to meet aquatic and riparian desired conditions.

Annual Riparian Grazing Permit Management Strategy

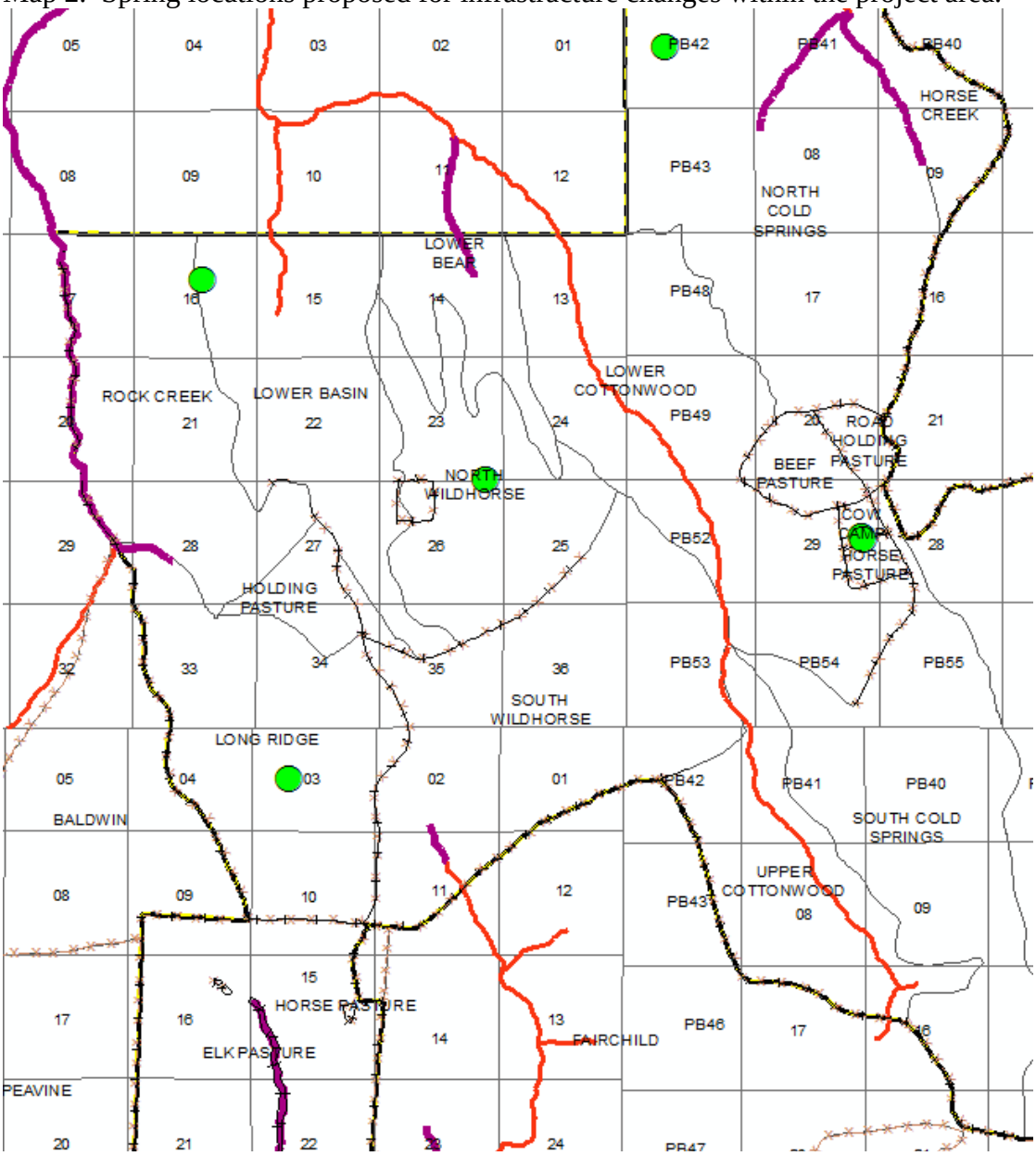
a. Monitor annual use indicators as required by the BA and Opinion.
b. Were the annual use indicators met?
    - Yes: Continue current management and monitoring (short and long term) to continue to determine if desired condition is being achieved.
    - No: Determine why the annual use indicator was not met. Was the failure due to causes outside the permittee's control (e.g., a grazing design problem, a changed condition outside the control of the permittee, or annual use indicator was not appropriate)? [An inappropriate annual use indicator is an indicator that is not the first attribute that might show excessive livestock impacts. In this situation, changing to a more appropriate indicator will help achieve or maintain desired conditions.]
        - Yes: Were there any effects to riparian and stream conditions? Develop a plan with permittee, fisheries biologist, and rangeland management specialist for the next year's grazing to respond to the cause (e.g., bad design, inappropriate use indicator, etc.) and/or effects to the resource.
        - No: Determine if any effects occurred to the stream conditions. Discuss with the permittee why the annual use indicator standard was not met and develop a plan (adaptive management) to be implemented the following year to correct grazing management in order to meet the annual use indicator standard. Change grazing management as needed if long-term effects to riparian and aquatic conditions occurred.
    - Yes: Continue current management and monitoring (short and long) to continue to determine if desired condition is being achieved and direction from consultation will be met.
    - No: Determine why the end of season indicator was not met. Was the failure due to causes outside the permittee's control (for example; a grazing design problem, a changed condition outside the control of the permittee, or annual use indicator was not appropriate)? An inappropriate end of season indicator is an indicator that is not the first attribute that might show excessive livestock impacts. In this situation, changing to a more appropriate indicator will help achieve or maintain desired conditions. Review/analyze current vs. desired condition and trend.
        - Yes: Were there any effects to the resource? Develop a plan with permittee, fisheries biologist and rangeland management specialist for the next year's grazing to respond to the cause (e.g. bad design, inappropriate use indicator, etc.) and/or effects to the resource.
        - No: Determine if any effects occurred to the resource. Discuss with the permittee why the standard was not met and develop a plan (adaptive management) to be implemented the following year to correct the management to meet the standard. Change management as needed if long-term affects occurred.
c. Contact the Line officer with a recommendation for change(s) to occur for the next grazing season. Line officer will work with biologist and rangeland management specialist in making an assessment if effects to riparian and stream conditions are outside what was described and anticipated in this consultation.
d. Line Officer contacts the Services.

Long-Term Riparian Grazing Permit Management Strategy

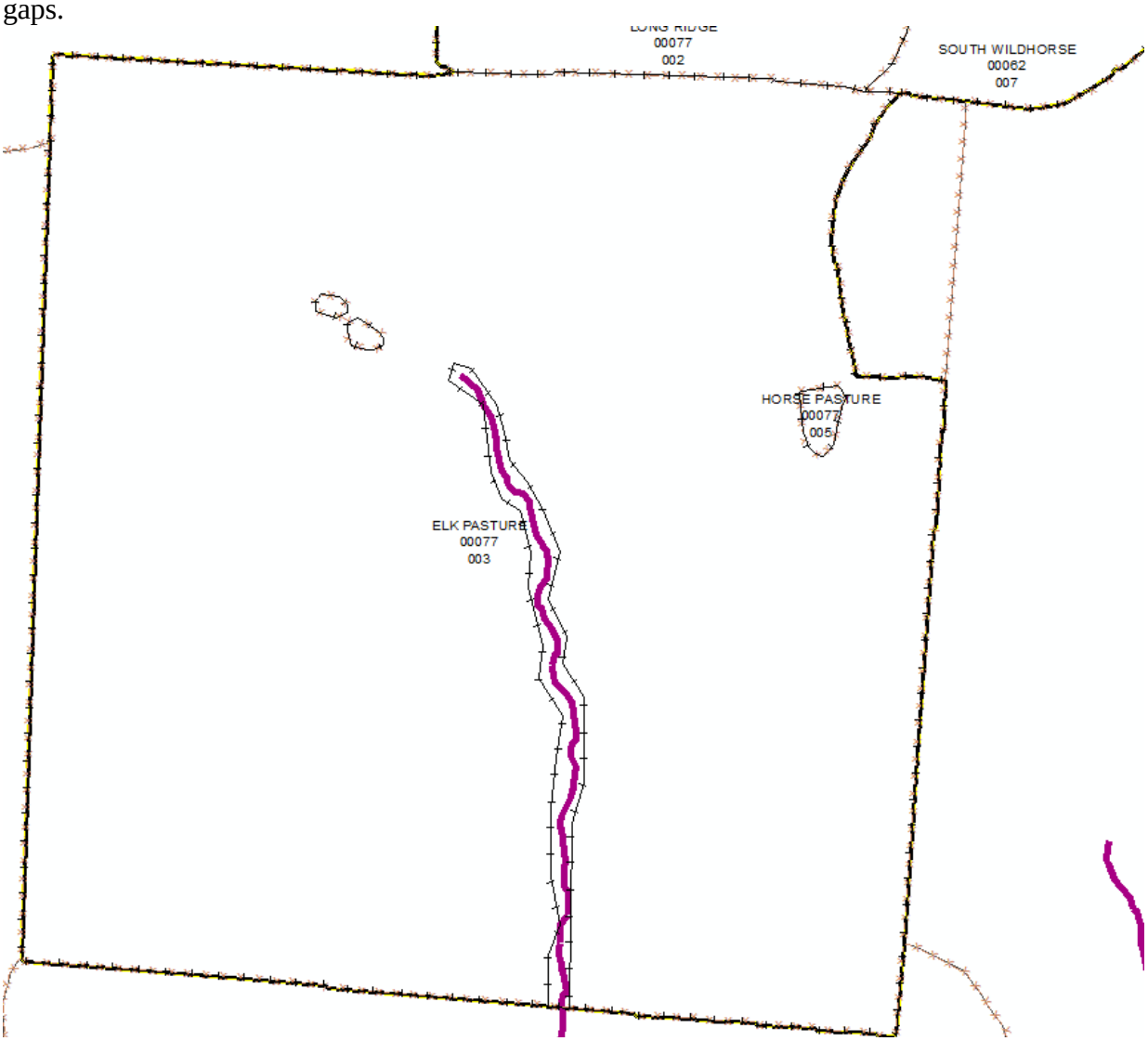
a. Determine current aquatic and riparian conditions using MIM trend data and local knowledge of results captured in the annual monitoring reports.
b. Compare current aquatic and riparian conditions to desired conditions as described in the Forest Plan.
c. Are Forest Plan aquatic and riparian desired conditions met on the Allotment?
    - Yes: Continue management as prescribed allowing for annual changes as needed to ensure annual use indicators described in the BA and this Opinion are met.
    - No: Are livestock the limiting factor (annual use indicators are not being met and/or are ineffective) and is the trend in habitat conditions downward or static?
        - No: Provide information to the appropriate Line Officer who then contacts the Services. Continue monitoring.
        - Yes: Provide information to the Line Officer who then works with the resource specialists in making an assessment of effects of grazing on aquatic and riparian conditions. Develop changes to the grazing strategy to reduce livestock use and effects to riparian areas in the pasture.

    The Line Officer contacts the Services to inform the Services of changes to grazing management on the Allotment and to determine if consultation reinitiation is required.

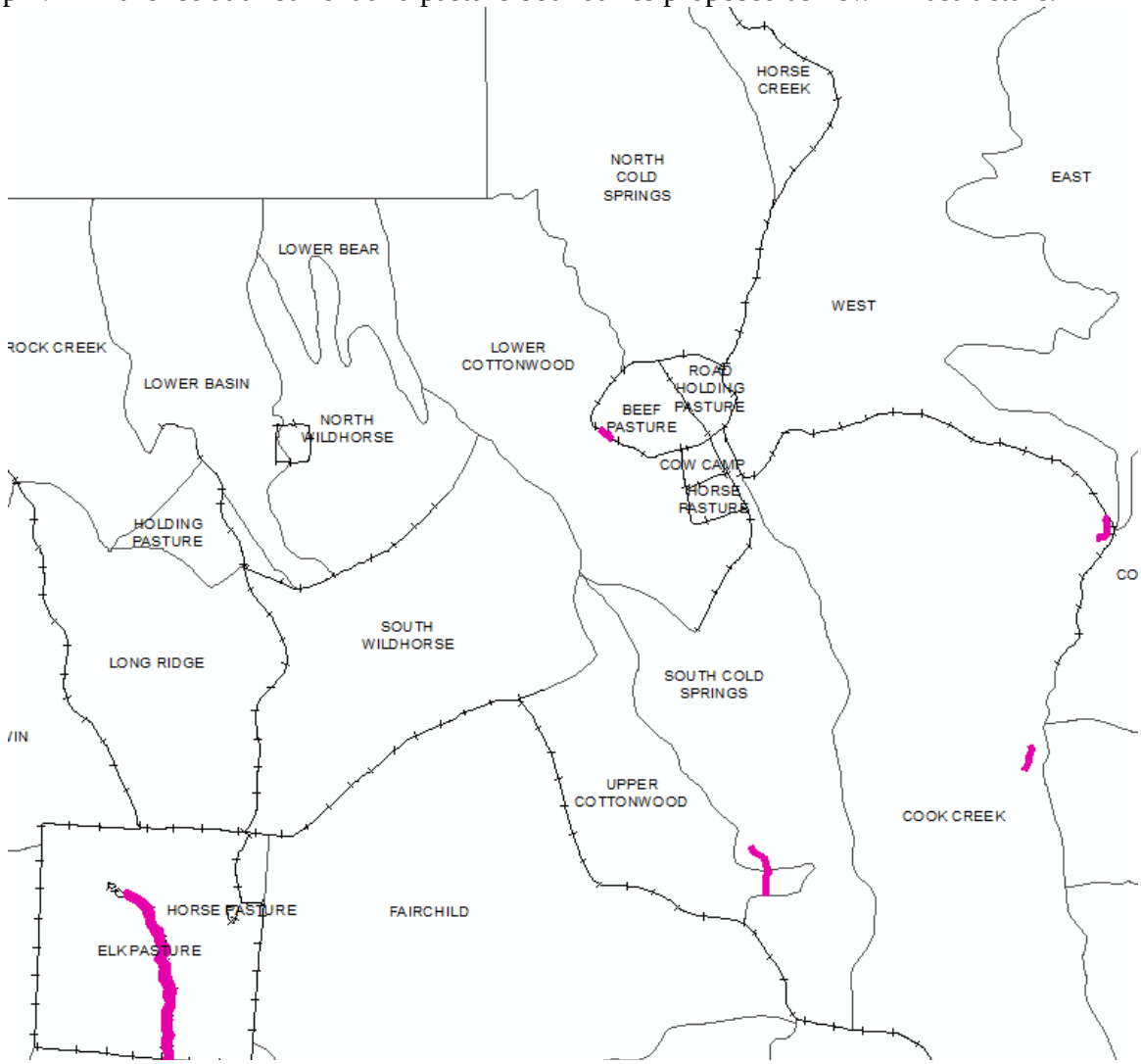
Map 2. Spring locations proposed for infrastracture changes within the project area.



Map 3: Peavince Creek enclosure fence within the Elk Pasture of Teepee Elk Allotment. The purple line is Peavine Creek in the Elk pasture of Teepee Elk Allotment. This is meant to give an idea of the location and extent of the riparian fence enclosure. Not shown are the water gaps.



Map 4: Drift fence at allotment and pasture boundaries proposed as new infrastructure.



Direct and Indirect Effects of Design Criteria, Mitigations, and Monitoring Common to Alternatives 2 and 3

Mitigation measures address potential and actual impacts through avoidance, reduction, or rehabilitation. Mitigation measures would be incorporated into the Allotment Management Plans and term grazing permits and implemented through the Annual Operating Instructions to provide for further protection of resources. Construction of larger spring source enclosures has no effect to grazing, will increase function of the spring source and will have the same effect of the existing enclosure fence. Depending on location the constructed fence may affect archeology indirectly through changing cattle distribution. The proposed drift fences will limit the effect of grazing to the authorized allotment and increase management within the allotment by defining pasture boundaries and encouraging redistribution within the pasture.

Cumulative effects of Design Criteria, Mitigations, and Monitoring Common to Alternatives 2 and 3

The proposed action common to all grazing alternatives are an extension or increased amount of the activities already occurring and therefore are discussed within alternative 2.

Summary of Effects

Alternative 1 does not meet and is not consistent with the Forest Plan (as amended by the CMP) direction to make available forage production above that needed for maintenance or improvement of the basic resources to wildlife (within Management Objective levels), to permitted domestic livestock under standards and guidelines that will assure continued maintenance or improvement of the resource. This Alternative would not maintain ranching as a traditional and valid use of lands within the HCNRA (CMP).

Alternative 2 does meet and is consistent with Forest Plan direction to make available forage production above that needed for maintenance or improvement of the basic resources to wildlife (within Management Objective levels), to permitted domestic livestock under standards and guidelines that will assure continued maintenance or improvement of the resource. This Alternative also works towards maintaining ranching as a traditional and valid use of lands within the HCNRA (CMP).

Alternative 3 does meet and is consistent with Forest Plan (as amended by the CMP) direction to make available forage production above that needed for maintenance or improvement of the basic resources to wildlife (within Management Objective levels), to permitted domestic livestock under standards and guidelines that will assure continued maintenance or improvement of the resource. This Alternative also works towards maintaining ranching as a traditional and valid use of lands within the HCNRA (CMP).

Table 4: Alternative Comparison

		Alterntive 1	Alternative 2	Alternative 3
Allotments		None	Cold Spring Teepee Elk	Cold Spring Teepee Elk Lost Cow
Acres (National Forest lands) grazed	Cold Srring Teepee Elk Lost Cow Total	0	30,405 7,600 0 38,600	30,405 7,600 200 38,800
Permitted Head Months	Cold Srring Teepee Elk Lost Cow Total	0	2,165 880 0 3,045	3,000 880 16 3,896
Estimated number of cattle for season	Cold Srring Teepee Elk Lost Cow Total	0	433 176 0 608	500 176 2 679
Grazing Season	Cold Srring Teepee Elk Lost Cow	0	5 months 5 months 0 months	6 months 5 months 5 months

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APPENDIX

Appendix A Monitoring Protocols

Appendix B Monitoring Data

Appendix C Range Readiness Indicators

Appendix D Condition and Trend Sites

Appendix E Plant Association Ecological Site Description Crosswalk

Appendix F Interpreting Indicators of Rangeland Health

Appendix G Glossary